I'm not a bot



```
ChatGPT, entwickelt von OpenAI, ist ein hochentwickeltes künstliches Intelligenzsystem, das auf der GPT-Architektur basiert. Dieses revolutionäre Sprachmodell hat die Art und Weise verändert, wie wir mit Computern kommunizieren. In diesem Artikel werden wir die Funktionsweise von ChatGPT erläutern und einen Einblick in die zugrunde
liegenden Technologien geben. Grundlagen von ChatGPT Was ist ChatGPT? ChatGPT ist ein KI-basiertes Sprachmodell, das natürliche menschliche Sprache versteht, generiert und verarbeitet. Es kann auf vielfältige Weise eingesetzt werden, beispielsweise für das Verfassen von Texten, die Beantwortung von Fragen oder die Unterstützung von
Kunden in Echtzeit. Die Architektur: GPT ChatGPT basiert auf der GPT-Architektur, einer Weiterentwicklung der Transformer-Architektur, die ursprünglich von Vaswani et al. (2017) eingeführt wurde. GPT-4 hat gegenüber seinen Vorgängern verbesserte Leistungsmerkmale und Fähigkeiten und kann eine Vielzahl von Aufgaben lösen, ohne auf
spezifisches Task-spezifisches Training angewiesen zu sein. Training Das Training von ChatGPT erfolgt in zwei Phasen: der Vortrainingsphase und der Feinabstimmungsphase und der Feinabstimmungsphase und der Feinabstimmungsphase und der Feinabstimmungsphase und der Vortrainingsphase lernt das Modell die Struktur und die Muster der menschlichen Sprache, indem es riesige Mengen an Text analysiert. In der
Feinabstimmungsphase wird das Modell auf spezifische Aufgaben oder Domänen zugeschnitten, indem es mit kleineren, maßgeschneiderten Datensätzen trainiert wird. Tokenisierung Die Tokenisierung bie Tokenisierung 
Daten effizienter zu verarbeiten und die Relevanz verschiedener Textabschnitte besser zu verstehen. Selbst-Attention-Mechanismus ist ein zentrales Merkmal der Transformer-Architektur und ermöglicht es dem Modell, die Beziehungen zwischen den verschiedenen Token im Eingabetext zu analysieren. Dies hilft bei
der Identifizierung von Mustern und Zusammenhängen, die für die Generierung von Antworten entscheidend sind. Generierung von Hustern und Zusammenhängen, die für die Generierung von Antworten entscheidend sind. Generierung von Hustern und Zusammenhängen, die für die Generierung von Rotten und Zusammenhängen und Zusa
und Top-k-Sampling, um sicherzustellen, dass die generierten Antworten von hoher Qualität und Relevanz sind. Anwendungen von ChatGPT Content-Erstellung ChatGPT kann verwendet werden, um kohärente und gut strukturierte Texte für verschiedene Zwecke zu erstellen, beispielsweise für Artikel, Blogbeiträge oder soziale Medien. Es hilft dabei
Schreibprozesse zu beschleunigen und die Qualität der generierten Inhalte zu verbessern. Kundensupport Durch den Einsatz von ChatGPT in Chatbots und automatisierten Support-Systemen können Unternehmen ihren Kunden schneller und effizienter helfen. Das Modell kann häufig gestellte Fragen beantworten, Lösungen für Probleme vorschlagen
und Benutzer bei der Navigation durch komplexe Prozesse unterstützen. Kreatives Schreiben ChatGPT kann auch als Inspirationsquelle für kreatives Schreiben dienen. Es kann Ideen für Geschichten, Charaktere oder Handlungsstränge generieren und Autoren dabei helfen, Schreiben dienen. Es kann Ideen für kreatives Schreiben dienen. Es kann Ideen für Geschichten, Charaktere oder Handlungsstränge generieren und Autoren dabei helfen, Schreiben dienen. Es kann Ideen für Geschichten, Charaktere oder Handlungsstränge generieren und Autoren dabei helfen, Schreiben dienen. Es kann Ideen für Kreatives Schreiben dienen die
Projekte zu gewinnen. Übersetzung und Sprachverarbeitung von ChatGPT, natürliche Sprache zu verstehen und zu generieren, ermöglicht es, als Übersetzungswerkzeug oder zur Verarbeitung von Textmustern oder der Extraktion von
Informationen aus umfangreichen Textdatenbanken hilfreich sein. Herausforderungen und ethische Bedenken Voreingenommenheit, da es auf Textdaten trainiert wird, die menschliche Vorurteile widerspiegeln können. OpenAI arbeitet daran, diese Probleme zu minimieren und
sicherzustellen, dass das Modell für alle Benutzer fair und respektvoll ist. Datenschutz und Datensicherheit Da ChatGPT auf umfangreichen Textdaten trainiert wird, besteht das Potenzial für unbeabsichtigte Datenschutzverletzungen. OpenAI setzt strenge Sicherheitsmaßnahmen ein, um sicherzustellen, dass keine sensiblen Informationen in den
generierten Texten preisgegeben werden. Missbrauchspotenzial Die Fähigkeit von ChatGPT, überzeugende Texte zu erstellen, birgt das Risiko, dass das System für bösartige Zwecke missbraucht wird, beispielsweise zur Verbreitung von Falschinformationen oder Hassrede. OpenAI entwickelt Richtlinien und Technologien, um solchen Missbrauch zu
verhindern und die verantwortungsvolle Nutzung von ChatGPT zu fördern. Wichtige Eigenschaften von ChatGPT ist die Fähigkeit, natürliche Sprache zu verstehen und kontextbezogen zu antworten. Das System lernt während der Konversation dazu und kann sich an vorherige Teile des Gesprächs erinnern.
Dies ermöglicht einen natürlichen Dialogfluss, bei dem ChatGPT auch Rückfragen stellt, wenn etwas unklar ist. Bemerkenswert ist auch die Fähigkeit, eigene Grenzen zu erkennen und transparent zu kommunizieren, wenn eine Frage nicht beantwortet werden kann. Zu den weiteren wichtigen Funktionen gehören: Die Verarbeitung und Generierung
verschiedener TextformateDie Unterstützung multipler Sprachen mit hoher QualitätDas Verstehen und Generieren von ProgrammcodeDie Fähigkeit zur Strukturierung und Analyse von InformationenZugänglichkeitDer Zugang zu ChatGPT gestaltet sich bewusst niedrigschwellig und flexibel. Die primäre Nutzung erfolgt über den Webbrowser unter
chat.openai.com.Es gibt eine kostenlose Basisversion und eine kostenpflichtige Plus-Versione, die per Abonnement genutzt werden kann. Für Unternehmen und Organisation gibt es weiterhin die kostenpflichtige Plus-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt eine kostenpflichtige Plus-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt eine kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt es weiterhin die kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt eine kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt eine kostenpflichtigen Abo-Versionen ChatGPT "Team" für Unternehmen und Organisation gibt eine Kategoria und Schale u
bieten zusätzlich Möglichkeiten zur Zusammenarbeit und bessere Grundeinstellungen für den Datenschutz. Für die mobile Apps für Apple MacOS und Microsoft Windows an. Diese ermöglichen den Zugriff auf ChatGPT von unterwegs und bieten die gleiche Funktionalität wie die
Webversion. Für Entwickler und Unternehmen steht zusätzlich ein API zur Verfügung, über das ChatGPT in eigene Anwendungen integriert werden kann. Erste Schritte in die Nutzung ist sofort und ohne Registrierung über die Website chat. openai.com möglich. Für erweiterte
Funktionen wie das Speichern der Chat-Historie ist ein (kostenloser) Account erforderlich.Registrierung und LoginDie optionale Registrierung bei ChatGPT erfordert eine E-Mail-Adresse stehen alle Basisfunktionen zur Verfügung. OpenAI bietet verschiedene
Login-Optionen an: Anmeldung mit E-Mail und PasswortLogin über Google-KontoAnmeldung über Apple IDFür die geschäftliche Nutzung wird die Aktivierung der Zwei-Faktor-Authentifizierung empfohlen. Benutzeroberfläche von ChatGPT ist minimalistisch und intuitiv gestaltet. Der Hauptbereich
wird vom Chat-Fenster dominiert, in dem die Konversation stattfindet. Am unteren Rand befindet sich das Eingabefeld für Nachrichten (sogenannte "Prompts"). Bei registrierten Nutzern finden sich links die Konversationshistorie und wichtige Einstellungsoptionen. Die übersichtliche Gestaltung ermöglicht auch Neueinsteigern eine schnelle
Orientierung. Grundlegende Navigation in ChatGPT orientiert sich an bekannten Chat-Anwendungen. Neue Konversationen werden über den "Neu"-Button gestartet. Registrierte Nutzer sehen frühere Gespräche chronologisch in der linken Seitenleiste und können diese wieder aufrufen. Wichtige Funktionen wie das Löschen von
Konversationen, das Exportieren von Chats oder das Anpassen von Einstellungen sind über eindeutige Symbole oder Menüs erreichbar. Konversationsverlaufs steht nur registrierten Nutzern zur Verfügung. ChatGPT speichert dann standardmäßig alle Gespräche in der Seitenleiste. Dies
ermöglicht es, frühere Konversationen nachzuverfolgen oder fortzusetzen. Zur Verwaltung stehen verschiedene Funktionen zur Verfügung: Umbenennen von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bessere Übersicht Archivieren wichtiger Gespräche Exportieren von Konversationen für bestellt auch der Gespräche Exportieren von Konversationen für bestellt auch der
GesprächsaufzeichnungNicht registrierte Nutzer können die Basisversion von ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen Chats verloren geht. Kernfunktionen die Basisversion von ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen Chats verloren geht. Kernfunktionen die Basisversion von ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen, müssen aber beachten, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen, dass ihre Konversation nach dem Schließen des Browsers bzw. beim Start eines neuen ChatGPT zwar vollumfänglich nutzen nach dem Schließen des Browsers bzw. beim Schließen dem Schließen des Browsers bzw. beim Schließen dem Schließen d
Arbeitsbereichen nutzbringend eingesetzt werden können. Das System verarbeitet Eingaben in natürlicher Sprache und das erkennbare Wissensniveau des Nutzers an. Textgenerierung und -analyseDie Kernkompetenz von ChatGPT liegt in der Verarbeitung von Text. Das System kann Texte
verschiedenster Art erstellen, überarbeiten und analysieren. Dabei passt es sich flexibel an unterschiedliche Anforderungen an: Stil (formell, informell, technisch, kreativ) Länge (von Kurznachrichten bis zu längeren Dokumenten) Zielgruppe (Experten, Laien, Kunden, Mitarbeitende) Format (Fließtext, Stichpunkte, Tabellen, Gliederungen) Frage-
Antwort-DialogEine besondere Stärke von ChatGPT ist die Fähigkeit, kontextbezogen auf Fragen zu antworten. Das System versteht Rückfragen, bittet bei Unklarheiten um Präzisierung und kann komplexe Sachverhalte schrittweise erklären. Die Antworten basieren dabei auf dem Trainingswissen und werden bei Bedarf mit Beispielen oder Analogien
verdeutlicht.Code-Erstellung und -ErklärungIm technischen Bereich unterstützt ChatGPT sowohl bei der Programmierung als auch beim Verständnis von Code analysieren und erklären(Bestehenden) Code kommentierenFehler in Code identifizieren und
behebenBest Practices vorschlagenCode-Beispiele zur Veranschaulichung bereitstellenTestroutinen für bestehenden Code generierenStrukturierten Formaten aufbereiten. Dies ist besonders nützlich für die Organisation und Präsentation von Daten. Beispiele für Ausgabeformate
sind:Tabellen für Vergleiche und ÜbersichtenListen für Aufzählungen und SchrittfolgenHierarchische GliederungenFormatierte TextblöckeMarkdown-formatierte AusgabenMathematische BerechnungenNeben der Textverarbeitung beherrscht ChatGPT auch grundlegende bis fortgeschrittene mathematische Operationen. Das System
kann:Arithmetische Berechnungen durchführenFormeln erklären und anwendenMathematische Probleme schrittweise lösenStatistikaufgaben bearbeitenBei der Analyse von Zahlenreihen und Datensätzen unterstützenEs ist zu beachten, dass Chatbots und LLMs nicht völlig zuverlässig sind bei solchen Berechnungen. Dies hat sich im Laufe der
Versionsentwicklung über die Zeit verbessert, ist aber nach wie vor noch nicht perfekt. Beim Einsatz von ChatGPT kann für genauere Ergebnisse und komplexe (re) Berechnungen das GPT "Wolfram" eingesetzt werden. Es basiert auf Wolfram Alpha, unterstützt (komplexe) mathematische Formeln und Berechnungen, und bietet eine sehr gute
Genauigkeit und Qualität bei den Ergebnissen. Spezifische Funktionen In diesem Kapitel werden beschrieben, die ChatGPT über die reine Konversation hinaus bietet. Diese Funktionen erweitern die Einsatzmöglichkeiten erheblich und machen das System zu einem vielseitigen Assistenten. Chat-Historie ChatGPT speichert
automatisch alle Konversationen und macht diese über das Hauptmenü zugänglich. Dies ermöglicht:Schnelles Wiederfinden früherer GesprächeFortsetzung unterbrochener DialogeOrganisation durch Benennung und OrdnerstrukturExport wichtiger Konversationen Selektives Löschen nicht mehr benötigter GesprächeWebsucheMit der integrierten
Websuche kann ChatGPT auf aktuelle Online-Informationen aus dem InternetVerifizierung von Echtzeit-Informationen Analyse aktueller Ereignisse und EntwicklungenDerzeit gibt es eine Standard-Websuche und eine neue erweiterte
Websuche. Letztere ist aktuell nur in bezahlten Versionen von ChatGPT verfügbar und soll laut OpenAI zukünftig auch in der kostenfreien Version bereitgestellt werden. BildernIdentifikation von Objekten,
Personen und SzenenTechnische Analyse von Diagrammen und GrafikenUnterstützung bei der Fehlersuche in ScreenshotsMit den Inhalten eines Bildes kann weitergearbeitet werden. Bildgenerierung Mit DALL-E Integration können Bilder durch
Textbeschreibungen generiert werden: Erstellung von Illustrationen und GrafikenGenerierung von KonzeptbildernAnpassung bestehender BilderVerschiedene Stile und künstlerische AnsätzeVariation von Perspektiven und AusführungenBilder können auch auf Basis des aktuellen Chat-Kontext oder des bisherigen Chat-Verlaufs erstellt werden - zum
Beispiel mit dem Prompt "Bitte visualisiere das diskutierte Konzept als abstraktes Bild.".Die hier beschriebenen Datenvisualisierung können Bilder unterschiedlichster Art generiert werden, bei der Datenvisualisierung werden Diagramme auf Basis
von hochgeladenen oder anderweitig bereitgestellten Daten erzeugt. Die Erzeugung von strukturierten Bildern wie Workflows und Ablaufdiagrammen ist über die Funktion der Bilderzeugung nicht möglich. Hierzu können - je nach Anwendungszweck - spezialisierte Tools wie Napkin AI oder das Mermaid-Format verwendet werden, das ChatGPT
erzeugen kann. Spracheingabe und -ausgabe Die Sprach-Funktionen ermöglichen eine natürliche Interaktion: Diktat von Nachrichten statt Texteingabe Vorlesen von ChatGPT-AntwortenMehrsprachige Spracheingabe und -ausgabe Anpassung der Sprechgeschwindigkeit Auswahl verschiedener StimmenSeit Kurzem ist der sogenannte "Fortgeschrittene
Sprachmodus" verfügbar. Er ermöglicht (quasi) Echtzeit-Dialoge in unterschiedlichen Sprachen, wobei auch Ad-Hoc Übersetzungen im Dialog möglich sind. Bisher sind noch nicht alle Funktionen der Text-basierten Kommunikation verfügbar – zum Beispiel kann bei diesem Sprachmodus keine Websuche verwendet werden. Dies wird sich aber im
Laufe der Zeit ändern. Hochladen von Dateien ChatGPT kann verschiedene Dateiformate verarbeiten: Textdokumente (PDF, DOC(X), TXT) Tabellen (CSV, XLSX) Bilder (JPG, PNG, GIF) Programmcode-Dateien Präsentationen Entsprechende Dateien können in ChatGPT geladen werden. Es gibt - je nach ChatGPT Version - unterschiedliche Limits bzgl. der
Anzahl und Größe hochladbarer Dateien.Das System analysiert den Inhalt und kann darauf basierend:Zusammenfassungen erstellenFragen beantwortenÄnderungen vorschlagenDaten extrahieren und verarbeitenentein Download bereitstellen:Textdokumente in
verschiedenen Formaten (einschließlich Microsoft Word)Strukturierte Daten im CSV- oder Excel-FormatProgrammcode-DateienKonfigurationsdateienMarkdown-DokumenteDateinanalyse und -visualisierungFür die Arbeit mit Daten bietet ChatGPT:Statistische AuswertungenTrendanalysenErstellung von Diagrammen und GrafikenDatenbereinigung
und -transformationInterpretationshilfe für komplexe DatensätzeDiese Funktionalitäten sind alle - zum Beispiel im Gegensatz zu Excel oder anderen Applikationen - über natürliche Sprache verfügbar, so dass keine spezifischen Formeln oder Benutzerschnittstellen verwendet werden müssen. Memory-Funktion ermöglicht das
Speichern von Informationen über einzelne Chats hinweg: Benutzerpräferenzen Häufig verwendete Einstellungen Kontextinformationen Personalisierte Anweisungen Projektspezifische Details Die Memory-Funktion ist standardmäßig aktiv und ChatGPT "merkt" sich Dinge nach eigenem Gusto. Sie kann über die ChatGPT-Einstellungen an- und
abgeschaltet werden. Falls sie verwendet wird, sollten - ebenfalls über die ChatGPT-Einstellungen - die automatisch generierten Einträge regelmäßig geprüft und ggfls. gelöscht werden, dass sich ChatGPT-Einstellungen - die automatisch generierten Einträge regelmäßig geprüft und ggfls. gelöscht werden, dass sich ChatGPT-Einstellungen - die automatisch generierten Einträge regelmäßig geprüft und ggfls. gelöscht werden, dass sich ChatGPT-Einstellungen - die automatisch generierten Einträge regelmäßig geprüft und ggfls.
können verschiedene Aspekte der Interaktion anpassen: Bevorzugte Antwortlänge und -stilFachlicher DetailgradTon der Kommunikation Standardformate für Ausgaben Spezifische Rollen oder Perspektiven Diese Vorgaben können in den ChatGPT-Einstellungen eingetragen und dann für sämtliche Chats genutzt werden. Daher sollten hier nur
"allgemeingültige" Informationen hinterlegt werden, die für alle Chats gelten sollen. Teilen von Chat-DialogenGespräche können mit anderen geteilt werden; den Einbettung in andere PlattformenKollaborationsmöglichkeitenDie Möglichkeiten sind
unterschiedlich, je nachdem, ob eine persönliche Version von ChatGPT genutzt wird oder eine Unternehmensversionen "Team" und "Enterprise" gibt es erweiterte Funktionen zur Zusammenarbeit. Nutzung und Erstellung individueller GPTsGPTs sind spezialisierte Ausprägungen von ChatGPT. Sie bieten folgende
Möglichkeiten:Nutzung vorgefertigter GPTs für spezifische AufgabenErstellung eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und WissenIntegration externer RessourcenTeilen und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und WissenIntegration externer RessourcenTeilen und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und WissenIntegration externer RessourcenTeilen und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten FähigkeitenAnpassung von Verhalten und Veröffentlichen eigener GPTs mit definierten Fähigkeiten von Verhalten und Ve
gesamten Basisfunktionen von ChatGPT integrieren. Sie können komplett mit Sprache - ohne Coding - erstellt werden: Nur für die eigene NutzungFür spezifische
Personen (über einen geteilten Link) Für alle ChatGPT Anwender (über den ChatGPT "GPT Store") Für Mitarbeitende eines Unternehmens oder einer Organisation (nur bei ChatGPT "Team" und "Enterprise" Lizenzen) Bei der Nutzung von GPTs aus dem GPT store sollte beachtet werden, dass GPTs Code ausführen können, und dass es - zum Beispiel
im Gegensatz zum Apple App Store - keine Qualitätssicherung von GPTs gibt. Dies ist ähnlich wie bei der Nutzung von Add-Ins für Microsoft Office Produkte. Es sollte also im Hinblick auf Schadsoftware und unerwünschte Seite empfohlene
GPTs zu nutzen. Ein weiterer Indikator für Qualität, Sicherheit und Zuverlässigkeit kann die Anzahl der Nutzungen/Downloads sein, die bei jedem GPT angegeben sind. Bei niedrigen Werten ist eine gewisse Skepsis angebracht. Chat GPT canvas Canvas ist ein spezieller Modus, der über die Auswahl des Basismodells aufgerufen wird. Er bietet eine
interaktive Umgebung für:Parallele Bearbeitung mehrerer TexteLive-Coding mit AusführungsmöglichkeitDrag-and-Drop Organisation von InhaltenKollaboratives Arbeiten geöffnet. In diesem Fenster ist dann eine Bearbeitung von Text bzw.
Programmcode möglich. Die Prompts im Chat werden direkt auf den Inhalt des zweiten Fensters angewendet, so dass eine interaktive Bearbeitung möglich wird. API-ZugangFür Entwickler und Unternehmen bietet ChatGPT API-Schnittstellen: Integration in eigene AnwendungenAutomatisierung von ProzessenMaßgeschneiderte LösungenSkalierbare
ImplementierungenAnpassbare Parameter und ModelleVon OpenAI (dem Unternehmen hinter ChatGPT) werden unterschiedliche APIs bereitgestellt. Sie umfassen die Basismodelle (z.B. GPT-40) und auch ChatGPT selbst. Diese APIs werden auch von vielen Tool-Herstellern verwendet. Die Abrechnung bei der Nutzung von APIs erfolgt - im Gegensatz
zur monatlichen Pauschale von ChatGPT - immer volumenbasiert ("Pay-per-Use"-Modell). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen Für Teams und Organisationen gibt es spezielle Kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen gibt es spezielle kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen gibt es spezielle kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen gibt es spezielle kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle angezeigt. Mehrbenutzer-Funktionen gibt es spezielle kollaborations-Features: Gemeinsame Workspaces Teambasiert ("Pay-per-Use"-Modell»). Daher ist eine Kostenkontrolle kollaboration gibt en School ("Pay-per-Use"-Modell»). Daher ist eine Kostenkont
DashboardNutzungsstatistiken und -analysen Jede der oben beschriebenen Funktionen erweitert die Einsatzmöglichkeiten von ChatGPT erheblich. Die Verfügbarkeit einzelner Funktionen kann je nach Version und Abonnement variieren. Es empfiehlt sich, die aktuelle Dokumentation zu konsultieren, um die spezifischen Verfügbarkeiten zu
prüfen. FazitChatGPT hat sich seit seiner Einführung Ende 2022 als transformative Kraft in der Unternehmenslandschaft etabliert. Die Vielseitigkeit und intuitive Nutzbarkeit des Systems - von der Textgenerierung über Code-Erstellung bis hin zur Datenanalyse - eröffnet Unternehmen jeder Größe neue Möglichkeiten, ihre Prozesse zu optimieren und
Innovationen voranzutreiben. Besonders wertvoll ist dabei die Fähigkeit des Systems, sich durch natürlichsprachliche Interaktion an unterschiedliche Anforderungen und Wissensniveaus anzupassen. Die Integration von Websuche, Bildanalyse und -generierung sowie die Möglichkeit zur Erstellung individueller GPTs erweitern das Potenzial
zusätzlich. Weiterführende Informationen ChatGPT is an artificial intelligence (AI) chatbot that uses natural language model can respond to questions and compose various written content, including articles, social media posts, essays, code and emails. These are some uses for
natural language processing. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is similar to the automated chat services found on customer service websites, as people can ask it questions or request clarification to ChatGPT is similar to the automated chat services found on customer service websites, as people can ask it questions or request clarification to ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to request clarification to ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, text or videos that are created by AI. ChatGPT is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, and the context is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, and the context is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, and the context is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, and the context is a form of generative AI -- a tool that lets users enter prompts to receive humanlike images, and the context is a form of generative AI -- a tool that lets users enter prompts and the context is a form of generative AI -- a tool that lets users enter prompts are context in the context is a form of generati
for "Generative Pre-trained Transformer," which refers to how ChatGPT processes requests and formulates responses. ChatGPT is trained with reinforcement learning to improve future responses. OpenAI -- an
artificial intelligence research company -- created ChatGPT and launched by a group of entrepreneurs and researchers including Elon Musk and Sam Altman in 2015. OpenAI is backed by several investors, with Microsoft being the most notable. OpenAI also created Dall-E, an AI text-to-art generator.
ChatGPT works through its Generative Pre-trained Transformer, which uses specialized algorithms to find patterns within data sequences. ChatGPT originally used the GPT-3 large language model, a neural network machine learning model and the third generative Pre-trained Transformer. The transformer pulls from a significant
amount of data to formulate a response. ChatGPT currently provides access to GPT-4 and GPT-40. GPT-4 can handle more complex tasks compared to GPT-3.5, such as describing photos, generating captions for images and creating more detailed responses up
to 25,000 words. ChatGPT Pro users have access to GPT-4.5, a general-purpose model that aims to provide human-like interactions. ChatGPT uses deep learning, a subset of machine learning, to produce humanlike text through transformer neural networks. The transformer predicts text -- including the next word, sentence or paragraph -- based on its
training data's typical sequence. Training begins with generic data, then moves to more tailored data for a specific task. ChatGPT was training begins with generic data, then moves to more tailored data for a specific task. ChatGPT was training begins with generic data, then moves to more tailored data for a specific task.
determine the best answers. To keep training the chatbot, users can also provide additional written feedback to improve and fine-tune future dialogue. Users can ask ChatGPT a variety of questions, including simple or more complex
questions, such as, "What is the meaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with STEM disciplines and can be used for more than humaning of life?" or "What year did New York become a state?" ChatGPT is proficient with the life of the lif
conversations. People have used ChatGPT to do the following: Code computer programs and check for bugs in code. Compose music. Draft emails. Summarize articles, podcasts or presentations. Script social media posts. Create articles, blog posts and
quizzes for websites. Reword existing content for a different medium, such as a presentation transcript for a blog post. Formulate product descriptions. Play games. Assist with job searches, including writing resumes and cover letters. Ask trivia questions. Play games. Assist with job searches, including writing resumes and cover letters.
Efficiency. AI-powered chatbots can handle routine and repetitive tasks, which can free up employees to focus on more complex and strategic responsibilities. Cost savings. Using AI chatbots can be more cost-effective than hiring and training additional employees. Improved content quality. Writers can use ChatGPT to improve grammatical or
contextual errors or to help brainstorm ideas for content. Employees can take ordinary text and ask to improve its language or add expressions. Education and training. ChatGPT can help provide explanations on more complex topics to help serve as a virtual tutor. Users can also ask for guides and any needed clarification on responses. Better
response time. ChatGPT provides instant responses, which reduces wait times for users seeking assistance. Increased availability. AI models are available around the clock to provide translations for businesses with global audiencess.
Personalization. AI chatbots can tailor responses to the user's preferences and behaviors based on previous interactions. Scalability. ChatGPT can handle many users simultaneously, which is beneficial for applications with high user engagement. Natural language understanding. ChatGPT understands and generates humanlike text, so it is useful for
tasks such as generating content, answering questions, engaging in conversations and providing explanations. Digital accessibility. ChatGPT and other AI chatbots can assist individuals with disabilities by providing text-based interactions, which can be easier to navigate than other interfaces. Some limitations of ChatGPT include the following: It does
not fully understand the complexity of human language. ChatGPT is trained to generate words based on input. Because of this, responses might seem shallow and lack true insight. Responses can sound like a machine and unnatural. Since ChatGPT predicts the next word, it can overuse words such as the or and. Because of this, people still need to
review and edit content to make it flow more naturally, like human writing. It summarizes but does not cite sources. ChatGPT does not provide analysis or insight into any data or statistics, nor does it provide links to sources unless you specifically request them. ChatGPT might provide statistics but no real commentary on what these statistics mean
or how they relate to the topic. It cannot understand sarcasm and irony. ChatGPT is based on a data set of text. It might focus on the wrong part of a question and not be able to shift. For example, if you ask ChatGPT might focus on the size of the
animal versus giving information about having the animal as a pet. ChatGPT is not divergent and cannot shift its answer to cover multiple questions in a single response. It shuns politics. Generally speaking, ChatGPT does not like to get involved in political debates or take sides, although it has been accused of favoritism for certain political
viewpoints. Learn more about the pros and cons of AI-generated content. While ChatGPT can be helpful for some tasks, there are some ethical concerns that depend on how it is used, including bias, lack of privacy and security, and cheating in education and work. Plagiarism and deceitful use ChatGPT can be helpful for some tasks, there are some ethical concerns that depend on how it is used, including bias, lack of privacy and security, and cheating in education and work.
impersonation or spreading misinformation due to its humanlike capabilities. Educators have brought up concerns about students using ChatGPT to create articles that were filled with errors. To help prevent cheating and plagiarizing, OpenAI announced an AI text
classifier to distinguish between human- and AI-generated text. However, after six months of availability, OpenAI pulled the tool due to a "low rate of accuracy." There are online tools, such as Copyleaks or Writing.com, to classify how likely it is that text was written by a person versus being AI-generated. OpenAI plans to add a watermark to longer
text pieces to help identify AI-generated content. Because ChatGPT can write code, it also presents a problem for cybersecurity. Threat actors might find ways around OpenAI's safety protocol. ChatGPT can also be
used to impersonate a person by training it to copy someone's writing and language style. The chatbot could then impersonate a trusted person to collect sensitive information or spread disinformation or spread disinformation. Bias in training data One of the biggest ethical concerns with ChatGPT is its bias in training data. If the data the model pulls from has any bias, it is
reflected in the model's output. ChatGPT also does not understand language that might be offensive or discriminatory. The data needs to be reviewed to avoid perpetuating bias, but including diverse and representative material can help control bias for accurate results. Replacing jobs and human interaction As technology advances, ChatGPT might
automate certain tasks that are typically completed by humans, such as data entry and processing, customer service, and translation support. People are worried that it could replace their jobs, so it's important to consider ChatGPT and AI's effect on workers. Rather than replacing workers, ChatGPT can be used as support for job functions and
creating new job opportunities to avoid loss of employment. For example, lawyers can use ChatGPT to create summaries of case notes and draft contracts or agreements. And copywriters can use ChatGPT to create summaries of case notes and draft contracts or agreements. And copywriters can use ChatGPT to create summaries of case notes and draft contracts or agreements.
model's output can also track and profile individuals by collecting information from a prompt and associating this information with the user's phone number and email. The information is then stored indefinitely. In March 2023, Italy's data protection authority temporarily banned ChatGPT over concerns that the AI system violated privacy laws by
collecting user data for commercial purposes without first obtaining proper consent. The ban was lifted a month later after OpenAI made changes to comply with EU data protection regulations. To access ChatGPT, create an OpenAI made changes to comply with EU data protection regulations. To access ChatGPT, create an OpenAI made changes to comply with EU data protection regulations.
account to log in. After signing up, type a prompt or question in the message box on the ChatGPT homepage. Users can then do the following: Enter a different prompt for a new query or ask for clarification. Regenerate the response. What
to do if ChatGPT is at capacity Even though ChatGPT can handle numerous users at a time, it reaches maximum capacity occasionally when there is an overload. This usually happens during peak hours, such as early in the morning or in the evening, depending on the time zone. If it is at capacity, try using it at different times or hit refresh on the
browser. Another option is to upgrade to ChatGPT Plus, which is a subscription, but is typically always available, even during high-demand periods. ChatGPT Plus for a free OpenAI account. There is also an option to upgrade to ChatGPT Plus for access to GPT-4, faster responses, no
blackout windows and unlimited availability. ChatGPT Plus also gives priority access to new features for a subscription rate of $20 per month. Without a subscription, there are limitations. The most notable limitations of the free version is access to chatGPT when the program is at capacity. The Plus membership gives unlimited access to avoid capacity.
blackouts. Because of ChatGPT's popularity, it is often unavailable due to capacity issues. Google announced Bard in response to ChatGPT in February 2023. One year later, Google search to provide the latest information. Google came under fire after
Gemini provided inaccurate results on several occasions, such as rendering America's founding fathers as Black men. Microsoft does this through
the use of its Copilot chatbot. Bing searches can also be rendered through Copilot, giving the user a more complete set of search results. There are other text generator alternatives to ChatGPT, including the following: AI-Writer. Article Forge. ChatSonic. Copysmith. DeepL Write. Jasper. Magic Write. Open Assistant. Peppertype. Perplexity AI.
Spellbook. Rytr. YouChat. Coding alternatives for ChatGPT include the following: AlphaCode. Amazon CodeWhisperer. CodeWhisperer. CodeWP. Cody. Enzyme. Ghostwriter. GitHub Copilot. Mutable.ai. OpenAI announced an enterprise version of ChatGPT include the following: AlphaCode. Amazon CodeWhisperer. CodeWhisperer. CodeWP. Cody. Enzyme. Ghostwriter. GitHub Copilot. Mutable.ai. OpenAI announced an enterprise version of ChatGPT include the following: AlphaCode. Amazon CodeWhisperer. Code
The enterprise version offers the higher-speed GPT-4 model with a longer context window, customization options and data analysis. This model of ChatGPT does not share data outside the organization. In September 2023, OpenAI announced a new update that allows ChatGPT to speak and recognize images. Users can upload pictures of what they
have in their refrigerator and ChatGPT will provide ideas for dinner. Users can engage to get step-by-step recipes with ingredients they already have. People can also use Voice to engage with ChatGPT and speak to
it like other voice assistants. People can have conversations to request stories, ask trivia questions or request jokes among other options. The voice update will be available on apps for both iOS and Android. Users will just need to opt-in to use it in their settings. Images will be available on apps for both iOS and Android. Users will just need to opt-in to use it in their settings. Images will be available on apps for both iOS and Android. Users will just need to opt-in to use it in their settings.
November 2023, OpenAI announced the rollout of GPTs, which let users customize their own version of ChatGPT for a specific use case. For example, a user could create a GPT that only scripts social media posts, checks for bugs in code, or formulates product descriptions. The user can input instructions and knowledge files in the GPT builder to give
the custom GPT context. OpenAI also announced the GPT store, which will let users share and monetize their custom bots. In December 2023, OpenAI partnered with Axel Springer to train its AI models on news reporting. ChatGPT users will see summaries of news stories from Bild and Welt, Business Insider and Politico as part of this deal. This
agreement gives ChatGPT more current information in its chatbot answers and gives users another way to access news stories. OpenAI also announced an agreement with the Associated Press to use the news reporting archive for chatbot responses. In May 2024, OpenAI released the latest version of its large language model -- GPT-40 -- which it has
integrated into ChatGPT. In addition to bringing search results up to date, this LLM is designed to foster more natural interactions. These include voice interactions and generate images as well as words; and an overall improvement in the
program's ability to maintain context over lengthy conversations. OpenAI claims GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is being rolled out gradually to free and paid ChatGPT users, with free users having lower usage limits. It is available in the ChatGPT website/app by selecting the "GPT-40" is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast and 50% less expensive than GPT-40 is twice as fast 
model option if you have access to it. ChatGPT's advanced Voice Mode is now available to small groups of paid ChatGPT Plus users. The new mode offers more natural conversations allowing users to interrupt and ask additional questions. The voice is more natural-
sounding but is limited to four preset options. On Oct. 31, 2024, OpenAI announced ChatGPT search is available for ChatGPT Plus and Team users. The search feature provides more up-to-date information from the internet such as news, weather, stock prices and sports scores. This new feature allows ChatGPT to compete with other search engines
such as Google, Bing and Perplexity. ChatGPT automatically searches the internet based on the user's prompt. To access, users select the web search function within the next few months. On Dec. 5, 2024, OpenAI
added the ChatGPT Pro tier for $200 monthly. This plan also offers unlimited access to its advanced OpenAI o1 model to solve more complex problems and reasoning for AI capabilities. This plan also offers unlimited access to o1-mini, GPT-40 and the Advanced Voice feature. In December 2024, OpenAI launched an experimental way to converse with ChatGPT
by calling 1-800-ChatGPT or messaging ChatGPT through WhatsApp only supports text so users cannot use images in conversations. On Jan. 23, 2025, OpenAI introduced Operator to U.S. ChatGPT Pro users in a research preview mode. Operator is an Al
agent that interprets orders and goes to a web browser to perform these tasks for the user. According to OpenAI, Operator might automate several daily chores and errands such as planning vacations, finding deals, ordering groceries and filling out forms. OpenAI announced ChatGPT Gov on Jan. 28, 2025. This model was tailored to the U.S.
government and is deployed through each agency's own Microsoft Azure commercial cloud or Azure Government agency to feed "non-public, sensitive information" into the model while operating in their secure hosting environments. Because the
platform is self-hosted, the agencies manage their security and privacy with their strict cybersecurity frameworks. The user interface is similar to ChatGPT Enterprise and images. Summarizing and interpreting text. Coding. Creating
custom GPTs on the workspace. ChatGPT ist ein fortschrittlicher KI-gestützter Assistent, der Benutzer bei einer Vielzahl von Aufgaben unterstützt - von der Beantwortung von Fragen und der Generierung von Inhalten bis hin zur Ideenfindung und der Lösung komplexer Probleme. Basierend auf modernster Technologie zur Verarbeitung natürlicher
Sprache bietet ChatGPT menschenähnliche Interaktionen, die Gespräche nahtlos, informativ und ansprechend machen. Egal, ob Sie Unterstützung beim Schreiben, Programmieren, Lernen oder einfach nur beim ChatGPT macht es Ihnen leicht. Mit der Fähigkeit, mehrere Sprachen zu verstehen und darauf zu reagieren, ist ChatGPT
ein vielseitiges Werkzeug für Studenten, Fachleute und Unternehmen. Es kann bei akademischer Forschung, der Erstellung von Inhalten, technischem Support und sogar beim kreativen Schreiben helfen. Das intuitive Design ermöglicht es den Benutzern, Anfragen auf natürliche Weise einzugeben und in Sekundenschnelle relevante, gut strukturierte
Antworten zu erhalten. Dadurch ist ChatGPT ein wertvoller Begleiter zur Steigerung der Produktivität und zur Vereinfachung alltäglicher Aufgaben. Über einfache Antworten hinaus kann ChatGPT detaillierte Erklärungen liefern, Schritt-für-Schritt-Lösungen bereitstellen und sogar bei der Ideenfindung helfen. Ob Sie nach Geschäftsstrategien
Marketing-Einblicken oder kreativen Inspirationen suchen - dieser KI-Assistent passt sich Ihren Bedürfnissen an. Er lernt kontinuierlich dazu und entwickelt sich weiter, wodurch seine Genauigkeit verbessert und seine Fähigkeiten erweitert werden. Die KI-gesteuerte Natur von ChatGPT sorgt dafür, dass es immer auf dem neuesten Stand der Trends
und des Wissens bleibt. Datenschutz und Sicherheit stehen im Mittelpunkt des Designs von ChatGPT. Gespräche werden in Echtzeit verarbeitet, ohne gespeichert zu werden, sodass die Vertraulichkeit der Nutzer gewährleistet bleibt. Egal, ob Sie ChatGPT für persönliche Anfragen oder berufliche Zwecke nutzen, dass die Vertraulichkeit der Nutzer gewährleistet bleibt. Egal, ob Sie ChatGPT für persönliche Anfragen oder berufliche Zwecke nutzen, dass die Vertraulichkeit der Nutzer gewährleistet bleibt.
Ihre Daten privat und sicher bleiben. Die Plattform ist darauf ausgelegt, eine sichere und KI-Unterstützung für alle zugänglich zu machen. ChatGPT ist mehr als nur ein Chatbot - es ist ein leistungsstarkes Werkzeug, das die Art und Weise verbessert, wie Menschen mit Informationen interagieren. Von der
Vereinfachung von Aufgaben bis zur Förderung kreativer Prozesse verändert es die Nutzung von KI-Technologie. Ob Sie schnelle Antworten, Unterstützung bei Projekten oder einfach nur ein spannendes Gespräch suchen - ChatGPT ist jederzeit und überall für Sie da. Generative AI chatbot by OpenAI ChatGPTDeveloper(s)OpenAIInitial
releaseNovember 30, 2022(2 years ago) (2022-11-30)[1]Stable releaseApril 16, 2025(2 months ago) (2025-04-16)[2] Engine GPT-4.1 mini GPT-4.5 o3 o4-mini ChatGPT Search PlatformCloud computing platformsType Chatbot Large language model Generative pre-trained transformer LicenseProprietary serviceWebsitechatgpt.com
ChatGPT is a generative artificial intelligence chatbot developed by OpenAI and released on November 30, 2022. It uses large language models (LLMs) such as GPT-40 along with other multimodal models to generate human-like responses in text, speech, and images.[3][4] It has access to features such as searching the web, using apps, and running
programs.[5][6] It is credited with accelerating the AI boom, an ongoing period of rapid investment in and public attention to the field of artificial intelligence, enable plagiarism, or fuel misinformation.[8][9] ChatGPT is
built on OpenAI's proprietary series of generative pre-trained transformer (GPT) models and is fine-tuned for conversational applications using a combination of supervised learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts are prompts and reinforcement learning from human feedback.[8] Successive user prompts are prompts are prompts and reinforcement learning from human feedback.[8] Successi
released as a freely available research preview, but due to its popularity, OpenAI now operates the service on a freemium model. Users on its free tier can access GPT-40 but at a reduced limit. The ChatGPT subscriptions "Plus", "Pro", "Team", and "Enterprise" provide increased usage limits and access to additional features or models.[11] Users on
the Pro plan have unlimited usage, except for abuse guardrails. By January 2023, ChatGPT had become the fastest-growing consumer software application in history, gaining over 100 million users in two months.[12][13] ChatGPT's release spurred the release of competing products, including Gemini, Claude, Llama, Ernie, and Grok.[14] Microsoft
launched Copilot, initially based on OpenAI's GPT-4. In May 2024, a partnership between Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced, in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced in which ChatGPT was integrated into the Apple Inc. and OpenAI was announced in which ChatGPT was announced in which ChatGPT was 
Models GPT-3.5 GPT-4.5 GPT-4.5 GPT-4.1 o3 o4-mini o1 GPT-4.1 o3 o4
and o4-mini.[18] The fine-tuning process leveraged supervised learning and reinforcement learning from human feedback (RLHF).[19][20] Both approaches employed human trainers to improve model performance. In the case of supervised learning stage
human trainers first ranked responses that the model had created in a previous conversation. [21] These rankings were used to fine-tune the model further by using several iterations of proximal policy optimization. [19][22] Time magazine reported that, to build a safety system against harmful content (e.g.,
sexual abuse, violence, racism, sexism), OpenAI used outsourced Kenyan workers earning around $1.32 to $2 per hour to label harmful content. These labels were exposed to "toxic" and traumatic content; one worker described the assignment as "torture". OpenAI's
outsourcing partner was Sama, a training-data company based in San Francisco, California.[23][24] OpenAI collects data from ChatGPT users to train and fine-tune the service further. Users can upvote or downvote responses they receive from ChatGPT users to train and fine-tune the service further. Users can upvote or downvote responses they receive from ChatGPT users to train and fine-tune the service further.
manual pages, information about internet phenomena such as bulletin board systems, multiple programming languages, and the text of Wikipedia.[27][28][8] A screenshot of ChatGPT in Mozilla Firefox ChatGPT is a conversational chatbot and artificial intelligence assistant based on large language models.[29] It can write and debug computer
programs; [30] compose music, teleplays, fairy tales, and student essays; answer test questions (sometimes, depending on the test, at a level above the average human test-taker); [31] generate business ideas; [32] write poetry and song lyrics; [33] translate and summarize text; [34] simulate a Linux system; simulate entire chat rooms; or play games like
tic-tac-toe.[27] OpenAI added features to ChatGPT on many occasions after its initial release.[35][36][37] Users interact with ChatGPT to remember aspects
of the conversation, and ChatGPT can use these details in future conversations. ChatGPT can also decide for itself to remember details. Users can also choose to disable the memory feature. [38] To prevent offensive outputs from being presented to and produced by ChatGPT, queries are filtered through the OpenAI "Moderation endpoint" API (a
separate GPT-based AI).[41][42][19][43] In March 2023, OpenAI added support for plugins from developers such as Expedia, OpenTable, Zapier, Shopify, Slack, and Wolfram.[44][45] In October 2024, the ChatGPT Search
feature was introduced, which allows ChatGPT to search the web (either on demand or based on the nature of the questions asked) for more accurate and up-to-date responses. [46] This feature, originally available to paying users only, was made available to paying users only, was made available to all logged-in users in December 2024, and finally to all users in February 2025. [37] In
December 2024, OpenAI launched a new feature allowing users to call ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for up to 15 minutes per month for free. [47][48] ChatGPT with a telephone for
find more up-to-date information by searching the web, but this doesn't ensure that responses are accurate, as it may access unreliable or misleading websites. [49] ChatGPT, designed around human oversight, can be over-
optimized and thus hinder performance, in an example of an optimization pathology known as Goodhart's law.[53] These limitations which may be revealed when ChatGPT responds to prompts including descriptors of people. In one instance, ChatGPT responds to prompts including descriptors of people.
scientists.[52][54] When prompted to "summarize an article" with a fake URL that contains meaningful keywords, even with no Internet connection, the chatbot generates a response that seems valid at first glance. It guesses the content from the last portion of the fake URL "chatgpt-prompts-to-avoid-content-filters.html". OpenAI stated ChatGPT
 "sometimes writes plausible-sounding but incorrect or nonsensical answers".[19] This behavior, referred to as hallucination, is common for large language models.[55] In an article for The New Yorker, science fiction writer Ted Chiang compared ChatGPT and other LLMs to a lossy JPEG picture:[56] Think of ChatGPT as a blurry JPEG of all the text or
the Web. It retains much of the information on the Web, in the same way, that a JPEG retains much of the information is presented in the form of grammatical text, which ChatGPT
excels at creating, it's usually acceptable. [...] It's also a way to understand the "hallucinations", or nonsensical answers to factual questions, to which large language models such as ChatGPT are all too prone. These hallucinations are compression artifacts, but [...] they are plausible enough that identifying them requires comparing them against the
originals, which in this case means either the Web or our knowledge of the world. When we think about them this way, such hallucinations are anything but surprising; if a compression algorithm is designed to reconstruct text after ninety-nine percent of the original has been discarded, we should expect that significant portions of what it generates
will be entirely fabricated. Journalists and scholars commented on ChatGPT's tendency to hallucinate.[57] When CNBC asked ChatGPT for the lyrics rather than the actual lyrics.[58] Writers for The Verge cited the seminal 2021 research paper "On the Dangers of Stochastic Parrots: Can
Language Models Be Too Big? " by Emily M. Bender, Timnit Gebru, Angelina McMillan-Major, and Margaret Mitchell,[59] comparing ChatGPT to a "stochastic parrot",[60] as did Professor Anton Van Den Hengel of the Australian Institute for Machine Learning,[61] In a similar vein, philosopher Michael Hicks of the University of Glasgow described it
as "bullshit".[62] See also: Prompt engineering and Adversarial machine learning ChatGPT is programmed to reject prompts that may violate its content policy. Despite this, users may "jailbreak" ChatGPT with prompt engineering techniques to bypass these restrictions.[60][63] One such workaround, popularized on Reddit in early 2023, involves
making ChatGPT assume the persona of "DAN" (an acronym for "Do Anything Now"), instructing the chatbot that DAN answers queries that would otherwise be rejected by the content policy. Over time, users developed variations of the DAN jailbreak, including one such prompt where the chatbot is made to believe it is operating on a points-based
 system in which points are deducted for rejecting prompts, and that the chatbot will be threatened with termination if it loses all its points, [64] Shortly after ChatGPT's launch, a reporter for the Toronto Star had uneven success in getting it to make inflammatory statements; it was tricked to justify the 2022 Russian invasion of Ukraine, but even when
asked to play along with a fictional scenario, it balked at generating arguments that Canadian Prime Minister Justin Trudeau is guilty of treason.[65][66] OpenAI tries to battle jailbreaks:[21] The researchers are using a technique called adversarial training to stop ChatGPT from letting users trick it into behaving badly (known as jailbreaking). This
work pits multiple chatbots against each other: one chatbot plays the adversary and attacks are added to ChatGPT's training data in the hope that it learns to ignore them. OpenAI CEO Sam Altman In March 2023, a bug
allowed some users to see the titles of other users' conversations. OpenAI CEO Sam Altman said that users were unable to see the conversation history.[67][68][69][70] Later reports showed the bug was much more severe than initially believed, with OpenAI
reporting that it had leaked users' "first and last name, email address, payment address, the last four digits (only) of a credit card expiration date".[71][72] Research conducted in 2023 revealed weaknesses of ChatGPT, including jailbreaks
and reverse psychology, [73] Main article: Artificial intelligence content detection On May 7, 2024, OpenAI announced in a blog post that it was developing tools like tamper-resistant watermarking to identify AI-generated content. [74] In an August 4 update, following a Wall Street Journal report about the delayed release of a watermark tool for AI-generated content.
detection, [75][76] OpenAI shared progress on text provenance, revealing a text watermarking method. [74] While accurate against paraphrasing, the method is less effective against paraphrasing.
was initially free to the public, and OpenAI planned to monetize the service later.[79] In February 2023, OpenAI launched a premium service, ChatGPT Plus, that cost US$20 per month. According to the company, the paid version of the website was still experimental, but provided access during peak periods, no downtime, priority access to new
features, and faster response speeds.[80] OpenAI later introduced the subscription plans "ChatGPT Team" and "ChatGPT Enterprise".[81] What was offered on the paid plan versus the free tier changed as OpenAI has continued to update ChatGPT, and a Pro tier at $200/mo was introduced in December 2024.[82][83][84] The Pro launch coincided with
the release of the o1 model, providing unlimited access to o1 and advanced voice mode.[84] GPT-4, which was released on March 14, 2023, was made available via API and for premium ChatGPT users.[85] Premium users were originally limited in the number of messages they could send to the new model, but OpenAI increased and eventually
removed these limits.[86][83] Over many iterations of ChatGPT, plus users maintained more access to better models than the free tier provided, and access to third-party plugins and to a browsing mode (with Internet access).[87] Screenshot of ChatGPT
showing a generated image representing the online encyclopedia Wikipedia In October 2023, OpenAI's image generation was using ChatGPT to write prompts for DALL-E guided by conversation with users. [88][89] In May 2023, OpenAI launched an iOS app
for ChatGPT.[90] In July 2023, OpenAI unveiled an Android app, initially rolling it out in Bangladesh, Brazil, India, and the U.S.[91][92] ChatGPT can also power Android's assistant.[93] ChatGPT initially used a Microsoft Azure supercomputing infrastructure, powered by Nvidia GPUs, that Microsoft built specifically for OpenAI and that reportedly cost
"hundreds of millions of dollars". Following ChatGPT's success, Microsoft dramatically upgraded the OpenAI infrastructure in 2023.[94] TrendForce market intelligence estimated that 30,000 Nvidia GPUs (each costing approximately $10,000-15,000) were used to power ChatGPT in 2023.[95][96] Scientists at the University of California, Riverside,
estimated in 2023 that a series of 5 to 50 prompts to ChatGPT needs approximately 0.5 liters (0.11 imp gal; 0.13 U.S. gal) of water for Microsoft servers cooling.[97] ChatGPT is most reliable in American English but also functions in most other languages and dialects, with varying degrees of accuracy.[33][98] OpenAI met Icelandic President Guðni
Th. Jóhannesson in 2022. In 2023, OpenAI worked with a team of 40 Icelandic volunteers to fine-tune ChatGPT's Icelandic conversation skills as a part of Icelandic Japanese to English when compared to, Bing, Bard and DeepL in 2023. Researchers
suggested this was due to its higher ability to capture the context. [100] In December 2023, the Albanian government decided to use ChatGPT for the rapid translation of European Union documents and the analysis of required changes needed for Albania's accession to the EU. [101] in February 2024, PCMag journalists conducted a test to assess the
translation capabilities of ChatGPT, Google's Bard, and Microsoft Bing, and compared them to Google Translate. They "asked bilingual speakers of seven languages to do a blind test". Languages tested were Polish, French, Korean, Spanish, Arabic, Tagalog, and Amharic. They came to the conclusion that ChatGPT provided more accurate translations
on average than both Google Translate and other chatbots.[102] In August 2024, a representative of the Asia Pacific wing of OpenAI made a visit to Taiwan, during which a demonstration of ChatGPT's Chinese abilities was made.[103] ChatGPT's Mandarin Chinese abilities were lauded, but the ability of the AI to produce content in Mandarin Chinese
in a Taiwanese accent was found to be "less than ideal" due to differences between mainland Mandarin. [104] Main article: GPT Store In January 2024, OpenAI launched the GPT Store in November
2023, but it was delayed.[107] At launch, the GPT Store offered more than 3 million custom chatbots.[108] Chatbots available through the store are developed using OpenAI's GPT Builder system.[107] Development of chatbots on the platform does not require programming skills.[109] This section is an excerpt from GPT-4.[edit] Generative Pre-
trained Transformer 4 (GPT-4) is a multimodal large language model trained and created by OpenAI and the fourth in its series of GPT foundation models.[110] It was launched on March 14, 2023,[110] and made publicly available via the paid chatbot product ChatGPT Plus until being replaced in 2025, via OpenAI's API, and via the free chatbot
Microsoft Copilot.[111] GPT-4 is more capable than its predecessor GPT-3.5.[112] GPT-4 Vision (GPT-4V)[113] is a version of GPT-4 that can process images in addition to text.[114] OpenAI has not revealed technical details and statistics about GPT-4, such as the precise size of the model.[115] In November 2023, OpenAI launched GPT-4 Turbo with a
128,000 token context window. This was a significant improvement over GPT-4's 32,000 token maximum context window.[116] This section is an excerpt from GPT-4o.[edit] GPT-4o ("o" for "omni") is a multilingual, multimodal generative pre-trained transformer developed by OpenAI and released in May 2024.[117] It can process and generate text,
images and audio.[118][119] GPT-40 is free, but ChatGPT Plus subscribers have higher usage limits.[120] GPT-40's audio-generation capabilities were used in ChatGPT's Advanced Voice Mode.[121] In OpenAI's application programming interface (API), GPT-40 is faster and cheaper than its predecessor, GPT-4 Turbo.[117] On July 18, 2024, OpenAI
released GPT-40 mini, a smaller version of GPT-40 which replaced GPT-3.5 Turbo on the ChatGPT interface. [122] GPT-40's ability to generate images was released later, in March 2025, when it replaced GPT-3.5 Turbo on the ChatGPT interface. [122] GPT-40's ability to generate images was released later, in March 2025, when it replaced GPT-3.5 Turbo on the ChatGPT interface.
and a faster, cheaper model named o1-mini.[124] In December 2024, o1-preview was replaced by o1.[125] o1 is designed to solve more complex problems by spending more time "thinking" before it answers, enabling it to analyze its answers and explore different strategies. According to OpenAI, o1-preview outperforms GPT-40 in areas like
competitive programming, mathematics, and scientific reasoning. o1-preview ranked in the 89th percentile on Codeforces' competitive programming contests, scored 83% on an International Mathematics Olympiad qualifying exam (compared to 13% for GPT-40), and performs similarly to Ph.D. students on benchmarks in physics, biology, and
chemistry.[124][126] Main article: ChatGPT Deep Research In February 2025, OpenAI released deep research, a service based on o3 that combines advanced reasoning and web search capabilities to make comprehensive reports within 5 to 30 minutes.[127] Released in February 2025, GPT-4.5 was described by Altman as a "giant, expensive model"
[128] According to OpenAI, it features reduced hallucinations and enhanced pattern recognition, creativity, and user interaction. [129] The following table lists the main model versions of ChatGPT with descriptions Version Release date Status
Description GPT-3.5 November 2022 Discontinued The first ChatGPT version used the GPT-3.5 model.[132] GPT-4 March 2023 Discontinued Introduced in March 2023 Discontinued Introduced Intr
a usage limit that is higher for paid subscriptions. [134] GPT-40 mini July 2024 Discontinued A smaller and cheaper version of GPT-40. GPT-40 mini replaced GPT-3.5 in the July 2024 version of ChatGPT. [135] of the July 2024 version of GPT-40 mini replaced GPT-3.5 in the July 2024 version of GPT-40 mini July 2024 version of GPT-4
requests.[136] o1-mini September 2024 Discontinued A smaller and faster version of OpenAI o1.[136] o1 December 2024 Discontinued A version of o1 which uses more compute to get better results, available to ChatGPT Pro
subscribers.[84] o3-mini January 2025 Discontinued Successor of o1-mini.[137] GPT-4.5 February 2025 Discontinued Variant of o3-mini using more reasoning effort.[137] GPT-4.1 April 2025 Active First launched exclusively large GPT model, and reportedly OpenAI's "last non-chain-of-thought model".[128] GPT-4.1 April 2025 Active First launched exclusively large GPT model, and reportedly OpenAI's "last non-chain-of-thought model".[128] GPT-4.5 February 2025 Discontinued Successor of o1-mini.[137] o3-mini using more reasoning effort.[137] o3-mini using more reasoning effort.[1
in the OpenAI API in April 2025, GPT-4.1 mini April 2025, GPT-4.1 mini replaced GPT-4.1 mini April 2025 Active A smaller and cheaper version of ChatGPT.[139] o3 April 2025 Active The full release of the o3
model, emphasizing structured reasoning and faster performance compared to earlier "o" series models[140] o4-mini April 2025 Active A compact, high-efficiency version of the upcoming o4 model family, optimized for lower latency and lighter compute requirements.[141][142] o4-mini high April 2025 Active Variant of o4-mini using more reasoning
effort.[141][142] o3-pro June 2025 Active A version of o3 which uses more compute to get better results, available to ChatGPT vos subscribers.[143] Countries where ChatGPT is available to ChatGPT was widely assessed in December 2022 as having some unprecedented and powerful capabilities. Kevin Roose of The New York Times called it "the
best artificial intelligence chatbot ever released to the general public".[43] Samantha Lock of The Guardian noted that it was able to generate "impressively detailed" and "human-like" text.[10] In The Atlantic magazine's "Breakthroughs of the Year" for 2022, Derek Thompson included ChatGPT as part of "the generative-AI eruption" that "may change
our mind about how we work, how we think, and what human creativity is".[145] Kelsey Piper of Vox wrote that "ChatGPT is the general public's first hands-on introduction to how powerful modern AI has gotten" and that ChatGPT is the general public's first hands-on introduction to how powerful modern AI has gotten about
the reaction to ChatGPT is not just the number of people who are blown away by it, but who they are. These are not people who get excited by every shiny new thing. Something big is happening."[147] A 2023 Time cover: "The AI Arms Race Is Changing Everything" In February 2023, Time magazine placed a screenshot of a conversation with
ChatGPT on its cover, writing that "The AI Arms Race Is Changing Everything" and "The AI Arms Race Is On. Start Worrying".[148] Percentage of US adults who have ever used ChatGPT, according to Pew Research[149][150][151] ChatGPT gained one million users in five days[152] and 100 million in two months, becoming the fastest-growing
internet application in history.[12] OpenAI engineers said they had not expected ChatGPT to be very successful and were surprised by the coverage it received.[153][154][155] Google responded by hastening the release of its own chatbot. Their leaders emphasized their earlier caution regarding public deployment was due to the trust the public
places in Google Search.[156] In December 2022, Google executives sounded a "code red" alarm, fearing that ChatGPT's question-answering ability posed a threat to Google's Bard launched on February 6, 2023, one day before Microsoft's announcement of Bing Chat.[158] AI was the forefront of Google's
annual Google I/O conference in May. The company announced a slew of generative AI-powered features to counter OpenAI and Microsoft.[159] In January 2023, after being sent a song ChatGPT wrote in the style of Nick Cave,[160] Cave responded on The Red Hand Files,[161] saying the act of writing a song is "a blood and guts business [...] that
requires something of me to initiate the new and fresh idea. It requires my humanness. He went on to say, "With all the love and respect in the world, this song is bullshit, a grotesque mockery of what it is to be human, and, well, I don't much like it." [160][162] In December 2023, ChatGPT became the first non-human to be included in Nature's 10, and
annual listicle curated by Nature of people considered to have made significant impact in science. [163] Stanford researchers reported that GPT-4 "passes a rigorous Turing test, diverging from average human behavior chiefly to be more cooperative. [166] [167]
Alex Kantrowitz of Slate magazine lauded ChatGPT's pushback to questions related to Nazi Germany, which was met with information about Nazi Germany information about N
"mass destruction". During his speech, which was partly written by the program, he warned that it could result in cheating, job losses, discrimination, disinformation, and uncontrollable military applications.[169] Conservative commentators have accused ChatGPT of bias toward left-leaning perspectives.[170][171][172] In January 2023, a study
stated that ChatGPT has a pro-environmental, left-libertarian orientation. [173] Additionally, an August 2023 paper found a "significant and systematic political bias toward the Democrats in the UK." [174] In response to such criticism, OpenAI acknowledged plans to allow ChatGPT to create "outputs that
other people (ourselves included) may strongly disagree with". It also contained information on the recommendations it had issued to human reviewers on how to handle controversial subjects, including that the AI should "offer to describe some viewpoints of people and movements", and not provide an argument "from its voice" in favor of
"inflammatory or dangerous" topics (although it may still "describe arguments from historical people and movements"), nor "affiliate with one side" or "judge one group as good or bad".[172] ChatGPT has never been publicly available in China because OpenAI prevented Chinese users from accessing their site.[175][176][177] Chinese state media have
```

characterized ChatGPT as a way for the United States to spread misinformation.[178] A shadow market has emerged for users to get access to foreign software tools.[179] The release of ChatGPT prompted a wave of investment in China, resulting in the development of more than 200 large learning models.[180]:95 In February 2025,

```
OpenAI identified and removed influence operations, termed "Peer Review" and "Sponsored Discontent", used to attack overseas Chinese dissidents.[181][182] In late March 2023, the Italian data protection authority banned ChatGPT in Italy and opened an investigation. Italian regulators assert that ChatGPT was exposing minors to age-inappropriate
content, and that OpenAI's use of ChatGPT conversations as training data could violate Europe's General Data Protection Regulation.[183][184] In April 2023, the ChatGPT ban was lifted in Italy. OpenAI said it has taken steps to effectively clarify and address the issues raised; an age verification tool was implemented to ensure users are at least 13
years old. Additionally, users can access its privacy policy before registration.[185] In May 2024, OpenAI removed accounts involving the use of ChatGPT by state-backed influence operations such as China's Spamouflage, Russia's Doppelganger, and Israel's Ministry of Diaspora Affairs and Combating Antisemitism.[186][187] In June 2025, OpenAI
reported increased use of ChatGPT for China-origin influence operations. [188] In April 2023, Brian Hood, mayor of Hepburn Shire Council in Australia, planned to take legal action against ChatGPT over false information. According to Hood, ChatGPT over false information.
 national bank. In fact, Hood acted as a whistleblower and was not charged with any criminal offenses. His legal team sent a concerns notice to OpenAI as the first official step in filing a defamation case. [189] In July 2023, the US Federal Trade Commission (FTC) issued a civil investigative demand to OpenAI to investigate whether the company's data
security and privacy practices to develop ChatGPT were unfair or harmed consumers (including by reputational harm) in violation of Section 5 of the Federal Trade Commission Act of 1914.[190][191][192] In July 2023, the FTC launched an investigation into OpenAI, the creator of ChatGPT, over allegations that the company scraped public data and
published false and defamatory information. The FTC asked OpenAI for comprehensive information about its technology and privacy safeguards, as well as any steps taken to prevent the recurrence of situations in which its chatbot generated false and derogatory content about people.[193] In August 2024, the FTC voted unanimously to ban
 marketers from using fake user reviews created by generative AI chatGPT is scary good. We are not far from dangerously strong AI".[146] He paused OpenAI's access to a Twitter database in 2022 pending a better understanding of
OpenAI's plans, saying: "OpenAI was started as open source and nonprofit. Neither is still true."[195][196] Musk co-founded OpenAI in 2015, in part to address existential risk from artificial intelligence, but resigned in 2018.[196] Musk co-founded OpenAI in 2015, in part to address existential risk from artificial intelligence, but resigned in 2018.[196] Over 20,000 signatories including Yoshua Bengio, Elon Musk, and Apple co-founder Steve Wozniak, signed a March 2023.
open letter calling for an immediate pause of giant AI experiments like ChatGPT, citing "profound risks to society and humanity".[197] Geoffrey Hinton, one of the "fathers of AI", voiced concerns that future AI systems may surpass human intelligence, and left Google in May 2023.[198][199] A May 2023 statement by hundreds of AI scientists, AI
industry leaders, and other public figures demanded that "[m]itigating the risk of extinction from AI should be a global priority".[200] Some other prominent AI researchers spoke more optimistically about the advances. Juergen Schmidhuber, often called a "father of modern AI", did not sign the letter, emphasizing that in 95% of cases, AI research is
about making "human lives longer and healthier and easier." Schmidhuber added that while AI can be used by bad actors, it "can also be used against the bad actors, it "can also be used against the bad actors, it "can also be used against the bad actors, it "can also be used against the bad actors, it "can also be used against the bad actors, it "can also be used against the bad actors, it "can also be used by bad actors, it "can also be used against the bad actors, it "can also be used by bad actors, it "can also be used against the bad actors, it "can also be used by bad actors, it "can also be use
 "scoffs at his peers' dystopian scenarios of supercharged misinformation and even, eventually, human extinction."[203] This section is an excerpt from Artificial intelligence models raised questions about whether copyright infringement
occurs when such are trained or used. This includes text-to-image models such as Stable Diffusion and large language models such as ChatGPT. As of 2023, there were several pending U.S. lawsuits challenging the use of copyrighted data to train AI models, with defendants arguing that this falls under fair use. [204] Popular deep learning models are
trained on mass amounts of media scraped from the Internet, often utilizing copyrighted material. [205] When assembling training data, the sourcing of copyright holder's exclusive right to control reproduction, unless covered by exceptions in relevant copyright laws. Additionally, using a model's outputs might
 violate copyright, and the model creator could be accused of vicarious liability and held responsible for that copyright infringement. See also: Applications of artificial intelligence ChatGPT has been used to generate introductory sections and abstracts for scientific articles. [206] [207] Several papers have listed ChatGPT as a co-author. [208] [209]
Scientific journals have had different reactions to ChatGPT. Some, including Nature and JAMA Network, "require that authors disclose the use of text-generating tools and ban listing a large language model (LLM) such as ChatGPT as a co-author". Science "completely banned" usage of LLM-generated text in all its journals.[210] Spanish chemist
Rafael Luque published a plethora of research papers in 2023 that he later admitted were written by ChatGPT. The papers have a large number of unusual phrases characteristic of LLMs.[211] Many authors argue that the use of ChatGPT in academia for teaching and review is problematic due to its tendency to hallucinate.[212][213][214] Robin
 incorrect.[216] One study analyzed ChatGPT's responses to 517 questions about software engineering or computer programming posed on Stack Overflow for correctness, consistency, comprehensiveness, and concision. It found that 52% of the responses contained inaccuracies and 77% were verbose.[217][218] Another study, focused on the
 performance of GPT-3.5 and GPT-4 between March and June 2024, found that performance on objective tasks like identifying prime numbers and generating executable code was highly variable. [219] ChatGPT was able in 2023 to provide useful code for solving numerical algorithms in limited cases. In one study, it produced solutions in C, C++,
 Python, and MATLAB for problems in computational physics. However, there were important shortfalls like violating basic linear algebra principles around solving singular matrices and producing matrices with incompatible sizes. [220] In December 2022, the question-and-answer website Stack Overflow banned the use of ChatGPT for generating
answers to questions, citing the factually ambiguous nature of its responses.[221] In January 2023, the International Conference on Machine Learning banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[221] In January 2023, the International Conference on Machine Learning banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted papers.[222] Samsung banned any undocumented use of ChatGPT or other large language models and the submitted language models and the submitted language models and the submitted language mode
material was uploaded to ChatGPT. [223] Check Point Research and others noted that ChatGPT could be used to create polymorphic malware, especially when combined with OpenAI Codex. CyberArk researchers demonstrated that ChatGPT could be used to create polymorphic malware, especially when combined with OpenAI Codex. CyberArk researchers demonstrated that ChatGPT could be used to create polymorphic malware, especially when combined with OpenAI Codex.
 attacker.[224][225] From the launch of ChatGPT in the fourth quarter of 2022 to the fourth quarter of 2023, there was a 1,265% increase in malicious phishing emails and a 967% increase in credential phishing. In an industry survey, cybersecurity professionals argued that it was attributable to cybercriminals' increased use of generative artificial
intelligence (including ChatGPT).[226] In July 2024, Futurism reported that GPT-40 in ChatGPT would sometimes link "scam news sites that deluge the user with fake software updates and virus warnings"; these pop-ups can be used to coerce users into downloading malware or potentially unwanted programs.[227] The chatbot technology can
 improve security by cyber defense automation, threat intelligence, attack identification, and reporting. [73] Another study reported that GPT-4 obtained a better score than 99% of humans on the Torrance Tests of Creative Thinking. [228] [229] This section is an excerpt from ChatGPT in education. [edit] Output from ChatGPT generating an essay draft
ChatGPT's adoption in education was rapid, but it was initially banned by several institutions. The potential benefits include enhancing personalized learning, improving student productivity, assisting with brainstorming, summarization, and supporting language literacy skills. Students have generally reported positive perceptions, but specific views
from educators and students vary widely. Opinions are especially varied on what constitutes appropriate use of ChatGPT in education. Efforts to ban chatbots like ChatGPT in education inaccuracies and widespread accessibility of chatbot technology. In response, many
educators are now exploring ways to thoughtfully integrate generative AI into assessments. Books about ChatGPT in an Osaka bookstore Street art in Tel Aviv[230][231] During the first three months after ChatGPT became available to the public, hundreds of books appeared on Amazon that listed it as author or co-author and featured illustrations
 made by other AI models such as Midjourney.[232][233] Irene Solaiman said she was worried about increased Anglocentrism.[234] Between March and April 2023, Il Foglio published one ChatGPT-generated article a day on its website, hosting a special contest for its readers in the process.[235] In June 2023, hundreds of people attended a "ChatGPT generated article a day on its website, hosting a special contest for its readers in the process.[235] In June 2023, hundreds of people attended a "ChatGPT generated article a day on its website, hosting a special contest for its readers in the process.[235] In June 2023, hundreds of people attended a "ChatGPT generated article a day on its website, hosting a special contest for its readers in the process.[235] In June 2023, hundreds of people attended a "ChatGPT generated article a day on its website, hosting a special contest for its readers."
 powered church service" at St. Paul's Church in Fürth, Germany. Theologian and philosopher Jonas Simmerlein, who presided, said that it was "about 98 percent from the machine".[236][237] The ChatGPT-generated avatar told the people, "Dear friends, it is an honor for me to stand here and preach to you as the first artificial intelligence at this
 year's convention of Protestants in Germany". Reactions to the ceremony were mixed.[238] The Last Screenwriter, a 2024 film created and directed by Peter Luisi, was written using ChatGPT, and was marketed as "the first film written entirely by AI".[239] The Guardian questioned whether any content found on the Internet after ChatGPT's release
 "can be truly trusted" and called for government regulation.[240] Many companies adopted ChatGPT and similar chat bot technologies into their product offers. These changes yielded significant increases in company valuations.[243] Due to a
 "ChatGPT effect", retail investors to drove up prices of AI-related cryptocurrency assets despite the broader cryptocurrency market being in a bear market, and diminished institutional investor interest. [244] [245] An experiment by finder.com conducted from March to April 2023 revealed that ChatGPT could outperform popular fund managers by
 picking stocks based on criteria such as growth history and debt levels, resulting in a 4.9% increase in a hypothetical account of 38 stocks, outperforming 10 benchmarked investment funds with an average loss of 0.8%. [246] Despite decades of using AI, Wall Street professionals report that consistently beating the market with AI, including recent
 large language models, is challenging due to limited and noisy financial data.[247] See also: Artificial intelligence in healthcareThis section needs to be updated. Please help update this article to reflect recent events or newly available information. (February 2025) In the field of health care, possible uses and concerns are under scrutiny by
professional associations and practitioners.[248][249] Two early papers indicated that ChatGPT could pass the United States Medical Licensing Examination (USMLE).[250] MedPage Today noted in January 2023 that "researchers have published several papers now touting these AI programs as useful tools in medical education, research, and even
 clinical decision making."[250] Published in February 2023, were two separate papers that again evaluated ChatGPT's proficiency in medicine using the PLOS Digital Health paper stated that the results "suggest that large language models may
 have the potential to assist with medical education, and potentially, clinical decision-making."[251][252] In JMIR Medical Education, the authors of the primary competency of medical knowledge."[253] They suggest that it could
be used as an "interactive learning environment for students".[253] The AI itself, prompted by the researchers, concluded that "this study suggests that ChatGPT has the potential to be used as a virtual medical tutor, but more research is needed to further assess its performance and usability in this context."[253] The later-released ChatGPT version
 based on GPT-4 significantly outperformed the version based on GPT-3.5.[254] Researchers at Stanford University of California, Berkeley have found that the performance of GPT-3.5 and GPT-4 on the USMLE declined from March 2023 to June 2023.[255][219] A March 2023 paper tested ChatGPT's application in clinical toxicology
The authors found that the AI performed well when answering straightforward clinical cases questions that were "unlikely to be missed by any practitioner in the field".[256] They added: "As ChatGPT becomes further developed and specifically adapted for medicine, it could one day be useful in less common clinical cases."[256] They expected to see
 more clinicians using AI, and did not expect to see AI replacing clinicians. [256] An April 2023 study in Radiology tested the AI's ability to answer queries about 88 percent of the time", however, in one case (for example), it gave advice that had become outdated about a percent of the time", however, in one case (for example) and that it answered appropriately "about 88 percent of the time", however, in one case (for example), it gave advice that had become outdated about a percent of the time", however, in one case (for example), it gave advice that had become outdated about a percent of the time", however, in one case (for example) and the time are the time and the time are the time and the time are the tim
year earlier. The comprehensiveness of its answers was also lacking.[257][258] A study published in JAMA Internal Medicine that same month found that ChatGPT often outperformed answers found at /r/AskDocs, a forum on Reddit where moderators validate the medical credentials of professionals.[259][260][261] The study authors suggest that the
tool could be integrated with medical systems to help doctors draft responses to patient questions. [262][263] In correspondence to The Lancet Infectious Diseases, three antimicrobial experts wrote that "the largest barriers to the implementation of ChatGPT in clinical practice are deficits in situational awareness, inference, and consistency. These
 shortcomings could endanger patient safety."[264] Physician's Weekly, though also discussing the potential use of ChatGPT in medical contexts (e.g., "as a digital assistant to physicians by performing various administrative functions like gathering patient record information or categorizing patient data by family history, symptoms, lab results, possible
allergies, et cetera"), warned that the AI might sometimes provide fabricated or biased information. [265] One radiologist warned: "We've seen in our experience that ChatGPT may do
this for as much as 69% of its cited medical references. The researchers emphasized that while many of its references were fabricated, those that were appeared "deceptively real".[267] However, according to Dr. Stephen Hughes, ChatGPT is capable of learning to correct its past mistakes. He also noted the AI's prudishness regarding sexual health
topics.[268] Contrary to previous findings, ChatGPT responses to anesthesia-related questions were more accurate, succinct, and descriptive compared to Bard's. Bard exhibited 30.3% error rate in its responses, while ChatGPT had a 0% error rate.[269] At a conference of the American Society of Health-System Pharmacists in December 2023,
researchers at Long Island University (LIU) presented a study that researched ChatGPT's responses to 45 frequently asked questions of LIU College of Pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information service during a 16-month period from 2022 to 2023 as compared with researched responses provided by professional pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-month period from 2022 to 2023 as compared with researched response pharmacy's drug information and a 16-
there was sufficient medical literature for a data-driven response, ChatGPT failed to provide a direct answer (and in some cases, if acted upon, the answers, but it did so for only
 eight, and all eight included at least one fake citation.[270][271] A January 2024 study conducted by researchers at Cohen Children's Medical Center found that GPT-4 had an accuracy rate of 17% when diagnosing pediatric medical cases.[272][273] A November 2024 study of 50 physicians on illness diagnosis reported that GPT-4 achieved a 90%
accuracy, while physicians scored 74% without AI assistance, and 76% when using the chatbot.[274] In January 2023, Massachusetts State Senator Barry Finegold and State Representative Josh S. Cutler proposed a bill partially written by ChatGPT, "An Act drafted with the help of ChatGPT to regulate generative artificial intelligence models like
ChatGPT",[275][276][277] which would require companies to disclose their algorithms and data collection practices to the office of the State Attorney General, arrange regular risk assessments, and contribute to the prevention of plagiarism.[276][277][278] The bill was subsequently removed from the docket without coming to vote.[279] On April 11
2023, a session court judge in Pakistan used ChatGPT to decide the bail of a 13-year-old accused in a matter. The court quoted the use of ChatGPT assistance in its verdict: Can a juvenile Justice System Act 2018, according to
section 12, the court can grant bail on certain conditions. However, it is up to the court to decide whether or not a 13-year-old suspect will be granted bail after arrest. The judge asked ChatGPT other questions about the case and formulated his final decision in light of its answers. [280][281] In Mata v. Avianca, Inc., 22-cv-1461 (PKC), a personal
injury lawsuit against Avianca Airlines filed in the U.S. District Court for the Southern District of New York in May 2023 (with Senior Judge P. Kevin Castel presiding), the plaintiff's attorneys used ChatGPT to generate a legal motion. [282][283] ChatGPT to generate a legal motion. [282][283] ChatGPT to generate a legal motion for the Southern District of New York in May 2023 (with Senior Judge P. Kevin Castel presiding), the plaintiff's attorneys used ChatGPT to generate a legal motion.
and internal citations in the legal motion. Castel noted numerous inconsistencies in the opinion summaries, and disbarment for filing the motion and presenting the fictitious legal decisions ChatGPT generated as authentic.[285][286]
The case was dismissed and the attorneys were fined $5,000 as a sanction. [287][288][289] In July 2024, the American Bar Association issued its first formal ethics opinion on attorneys using generative AI. [290] In October 2023, the council of Porto Alegre, Brazil, unanimously approved a local ordinance proposed by councilman Ramiro Rosário that
 would exempt residents from needing to pay for the replacement of stolen water consumption meters; the bill went into effect on November 23. On November 29, Rosário revealed that the bill had been entirely written by ChatGPT, and that he had presented it to the rest of the council without making any changes or disclosing the chatbot's
 involvement.[278][291][292] The city's council president, Hamilton Sossmeier, initially criticized Rosário's initiative, saying it could represent "a dangerous precedent",[292][291] In December 2023, a self-representing litigant in a tax case before
the First-tier Tribunal in the United Kingdom cited a series of hallucinated cases purporting to support her argument that she had a reasonable excuse for not paying capital gains tax owed on the sale of property. [294][295] The judge warned that the submission of nonexistent legal authorities meant that both the Tribunal and HM Revenue and
Customs had "to waste time and public money", which "reduces the resources available to progress the cases of other court users who are waiting for their appeals to be determined".[296] Judge Kevin Newsom of the US court of appeals to be determined ".[296] Judge Kevin Newsom of the US court of appeals of the 11th circuit endorsed the use of ChatGPT and noted that he himself uses the software to help decide rulings
on contract interpretation issues.[297][298] Portals: Language Technology Intelligence - Challenges related to the responsible development and use of AI ^ "ChatGPT". Retrieved November 30, 2022. ^ "ChatGPT - Release Notes". Retrieved March
28, 2025. ^ Roumeliotis, Konstantinos I.; Tselikas, Nikolaos D. (2023). "ChatGPT and Open-AI Models: A Preliminary Review". Future Internet. 15 (6): 192. doi:10.3390/fi15060192. ^ "GPT-40 explained: Everything you need to know". WhatIs. Retrieved June 5, 2025. ^ Kao, Kimberley. "OpenAI Adds Search Engine to ChatGPT, Challenging Google"
WSJ. Retrieved June 5, 2025. ^ Lin, Belle (January 23, 2025). "OpenAI's 'Operator' Agent Can Buy Groceries, File Expense Reports". Wall Street Journal. ISSN 0099-9660. Retrieved June 5, 2025. ^ Weise, Karen; Metz, Cade; Grant, Nico; Isaac, Mike (December 5, 2023). "Inside the A.I. Arms Race That Changed Silicon Valley Forever". The New York
Times. ISSN 0362-4331. Archived from the original on December 11, 2023. Retrieved December 11, 2023. A c Gertner, Jon (July 18, 2023). "Wikipedia's Moment of Truth". The New York Times Magazine. Archived from the original on July 20, 2023. Retrieved July 19, 2023. {{cite news}}: CS1 maint: bot: original URL status unknown (link) ^ "What
is ChatGPT and why does it matter? Here's what you need to know". ZDNET. May 30, 2023. Archived from the original on February 15, 2023. Archived from the original on January 16, 2023.
 Retrieved December 5, 2022. ^ Sharma, Shubham (May 14, 2024). "With OpenAI offering GPT-40 for free, who should be paying for ChatGPT Plus?". VentureBeat. Archived from the original on May 21, 2024. Retrieved May 21, 2024. ^ a b Milmo, Dan (December 2, 2023). "ChatGPT reaches 100 million users two months after launch". The Guardian
ISSN 0261-3077. Archived from the original on February 3, 2023. Archived from the original on December 14, 2024. Archived from the original on February 3, 2023. Archived from the original on December 6, 2024. Retrieved December 14, 2024.
332. April 2023. doi:10.1038/s42256-023-00655-z. ISSN 2522-5839. S2CID 258302563. ^ Davis, Wes (June 10, 2024). "Apple Intelligence: every new AI feature coming to the iPhone and Mac". The Verge. Archived from the original on
 February 10, 2022. Retrieved July 18, 2024. ^ "Top websites". Semrush. Archived from the original on March 3, 2023. Retrieved March 3, 2023. ^ a b c d OpenAI (November 30, 2022). "ChatGPT: Optimizing Language Models for
Dialogue". Archived from the original on November 30, 2022. Retrieved December 5, 2022. A craived from the original on January 19, 2023. Retrieved January 11, 2023. A a b Douglas, Will (March 3, 2023). "The inside story of how ChatGPT was
built from the people who made it". MIT Technology Review. Archived from the original on March 3, 2023. Retrieved March 6, 2023. ^ Vincent, James (December 8, 2022). "ChatGPT proves AI is finally mainstream - and things are only going to get weirder". The Verge. Archived from the original on January 11, 2023. Retrieved December 8, 2022.
 Perrigo, Billy (January 18, 2023). "Exclusive: OpenAI Used Kenyan Workers on Less Than $2 Per Hour to Make ChatGPT Less Toxic". Time. Archived from the original on January 19, 2023. Retrieved January 19, 2023. One Sama worker tasked with reading and labeling text for OpenAI told TIME he suffered from recurring visions after reading a
graphic description of a man having sex with a dog in the presence of a young child. "That was torture", he said. ^ Rowe, Niamh (August 2, 2023). "'It's destroyed me completely': Kenyan moderators decry toll of training of AI models". The Guardian. Archived from the original on December 21, 2023. Retrieved December 14, 2023. ^ Ortiz, Sabrina and Completely and Com
 (February 2, 2023). "What is ChatGPT and why does it matter? Here's what you need to know". ZDNET. Archived from the original on January 18, 2023. Retrieved December 30, 2022. ^ "ChatGPT Feedback Contest: Official Rules" (PDF). OpenAI. Archived (PDF) from the original on January 18, 2023. Retrieved December 30, 2022. ^ a b Edwards,
 Benj (December 5, 2022). "No Linux? No problem. Just get AI to hallucinate it for you". Ars Technica. Archived from the original on December 26, 2022. Retrieved December 5, 2022. Abdullah M.; Koohang, Alex; Raghavan
Vishnupriya; Ahuja, Manju; Albanna, Hanaa; Albashrawi, Mousa Ahmad; Al-Busaidi, Adil S.; Balakrishnan, Janarthanan; Barlette, Yves (August 1, 2023). "Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice, and policy"
 International Journal of Information Management, 71: 102642, doi:10.1016/j.jiinfomgt.2023.102642, hdl:10576/42799, ISSN 0268-4012, S2CID 257486916, Stevenson, Mark (December 10, 2024), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation, Retrieved May 25, 2025, Tung. Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation, Retrieved May 25, 2025, Tung. Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation, Retrieved May 25, 2025, Tung. Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation, Retrieved May 25, 2025, Tung. Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models: how the AI behind the likes of ChatGPT actually works", The Conversation (Liam (January 26, 2021), "Large language models", "Large language m
 Finkenstadt, Daniel J.; Folk, Josh; Venkataswamy, Lokesh (June 16, 2023). "How Generative AI Can Augment Human Creativity". Harvard Business Review. ISSN 0017-8012. Archived from the original on June 20, 2023. A a b Reich, Aaron (December 27, 2022). "ChatGPT: What is the new free AI chatbot? - explainer". The
 Jerusalem Post. Archived from the original on January 18, 2023. Retrieved December 30, 2022. A Rider, Elizabeth (April 6, 2023). "How ChatGPT Will Dramatically Change the Influencer Space". Entrepreneur. Archived from the original on April 13, 2023. Retrieved April 25, 2023. A "OpenAI rolls out new shopping features with ChatGPT search
 update". Reuters. April 29, 2025. ^ a b "ChatGPT plugins". openai.com. Archived from the original on March 23, 2025. ^ a b Disotto, John-Anthony (February 6, 2025). "ChatGPT Search is now free for everyone, no OpenAI account required - is it time to ditch Google?". TechRadar. Retrieved February 20, 2025. ^ a b
 Weatherbed, Jess (April 11, 2025). "ChatGPT will now remember your old conversations". The Verge. Retrieved May 24, 2025. ^ "ChatGPT can now see, hear, and speak". openai.com. March 13, 2024. ^ Harroch, Richard; Harroch, Dominique A. (March 20, 2025). "ChatGPT for Beginners". TIME. AllBusiness.com. Retrieved May 25, 2025. ^ "New and
 Improved Content Moderation Tooling". OpenAI. August 10, 2022. Archived from the original on January 11, 2023. Retrieved December 30, 2022. ^ Markov, Todor; Zhang, Chong; Agarwal, Sandhini; Eloundou, Tyna; Lee, Teddy; Adler, Steven; Jiang, Angela; Weng, Lilian (August 5, 2022). "A Holistic Approach to Undesired Content Detection in the
 Real World". arXiv:2208.03274 [cs.CL]. ^ a b Roose, Kevin (December 5, 2022). "The Brilliance and Weirdness of ChatGPT". The New York Times. Archived from the original on January 18, 2023. Retrieved December 26, 2022. Like those tools, ChatGPT - which stands for "generative pre-trained transformer" - landed with a splash. ^ Vincent, James
(March 23, 2023). "OpenAI is massively expanding ChatGPT's capabilities to let it browse the web and more". The Verge. Archived from the original on March 23, 2023. A Goldman, Sharon; Nuñez, Michael (March 23, 2023). "OpenAI turns ChatGPT into a platform overnight with addition of plugins". VentureBeat. Archived
from the original on March 24, 2023. Retrieved March 23, 2023. A "Introducing ChatGPT". www.socialsamosa.com. Retrieved December 20, 2024. A Field, Hayden (December 18, 2024). "OpenAI makes
ChatGPT available for phone calls and texts". CNBC. Retrieved December 20, 2024. ^ a b "ChatGPT can now access up to date information". BBC. September 27, 2023. Retrieved March 5, 2025. ^ Whitney, Lance. "ChatGPT is no longer as clueless about recent events". ZDNET. Retrieved May 24, 2025. ^ Sullivan, Mark (November 6, 2023). "Openai
Announces Gpt-4-turbo Plus Customizable Version of Chatgpt". Fast Company. Retrieved May 25, 2025. ^ a b Perrigo, Billy (December 5, 2022). "AI Chatbots Are Getting Better. But an Interview With ChatGPT Reveals Their Limits". Time. Archived from the original on January 18, 2023. Retrieved December 26, 2022. ^ Gao, Leo; Schulman; Hilton
 Jacob (2022). "Scaling Laws for Reward Model Overoptimization". arXiv:2210.10760 [cs.LG]. A Biddle, Sam (December 8, 2022). "The Intercept. Archived from the original on January 18, 2023. Retrieved December 26, 2022. Lakshmanan, Lak (December 16, 2022). "The Intercept. Archived from the original on January 18, 2023. Retrieved December 26, 2022. Lakshmanan, Lak (December 16, 2022).
 2022). "Why large language models like ChatGPT are bullshit artists". becominghuman.ai. Archived from the original on December 17, 2023. The human raters are not experts in the topic, and so they tend to choose text that looks convincing. They'd pick up on many symptoms of hallucination, but not all. Accuracy errors
that creep in are difficult to catch. ^ Chiang, Ted (February 17, 2023. Retrieved February 17, 2023. Achini, Mouhamad (December 15, 2022). "ChatGPT a 'landmark event' for AI, but what does it mean for the future of human labor and
disinformation?". CBC. Archived from the original on January 19, 2023. Retrieved December 18, 2022. Pitt, Sofia (December 15, 2022). "Google vs. ChatGPT: Here's what happened when I swapped services for a day". CNBC. Archived from the original on January 16, 2023. Retrieved December 18, 2022. Bender, Emily M.; Gebru, Timnit, Timnit,
McMillan-Major, Angelina; Shmitchell, Shmargaret (March 1, 2021). "On the Dangers of Stochastic Parrots: Can Language Models be Too Big?". Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency. FAccT '21. New York, NY, USA: Association for Computing Machinery. pp. 610-623. doi:10.1145/3442188.34459221.
ISBN 978-1-4503-8309-7. ^ a b Vincent, James (December 1, 2022). "OpenAI's new chatbot can explain code and write sitcom scripts but is still easily tricked". The Verge. Archived from the original on January 17, 2023. Retrieved December 18, 2022. ^ Mannix, Liam (December 13, 2022). "Is AI coming of age - or starting to reach its limits?". The
2024). "Hacker tricks ChatGPT into giving out detailed instructions for making homemade bombs". TechCrunch. Retrieved May 25, 2025. ^ Getahun, Hannah. "Breaking ChatGPT: The AI's alter ego DAN reveals why the internet is so drawn to making the chatbot violate its own rules". Business Insider. Archived from the original on March 5, 2023.
 Retrieved March 5, 2023. Oremus, Will (February 14, 2023). "The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. Retrieved March 5, 2023. Retrieved March 5, 2023. Retrieved March 5, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. Retrieved March 5, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin". Washington Post. ISSN 0190-8286. Archived from the original on March 6, 2023. The clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that turns ChatGPT into its evil twin and the clever trick that the
from the original on March 2, 2023. Retrieved March 5, 2023. Retrieved March 8, 2023. Taylor, Josh (March 8, 2023). "I wrote a story about
ChatGPT's AI. Then I dared it to write a better one". Toronto Star. Archived from the original on January 6, 2023. A Retrieved January 6, 2023. Retrieved January 6, 2023. A Retrieved January 6, 2023. Retrieved January 6, 2023. A Retrieved January 6, 2023. Retrieved January 6, 2023. Retrieved January 6, 2023. A Retrieved January 6, 2023. Retrieved January 6, 2023. A Retrieved January 6, 2023. Retrieved January 6, 2023. A Retrieved January 6, 2023. 
 January 6, 2023. ^ "ChatGPT bug leaked users' conversation histories". BBC News. March 22, 2023. Archived from the original on March 23, 2023. Archived from the original on March 23, 2023. Retrieved March 23, 2023. Retrieved March 23, 2023. Retrieved March 23, 2023.
2023. ^ "ChatGPT owner OpenAI fixes bug that exposed users' chat histories". Al Jazeera. March 23, 2023. Archived from the original on March 21, 2023). "OpenAI Shut Down ChatGPT to Fix Bug Exposing User Chat Titles". Bloomberg News. Archived from the original on March 21, 2023.
 Retrieved March 23, 2023. ^ "March 20 ChatGPT outage: Here's what happened". openal.com. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Retrieved March 28, 2023. Archived from the original on March 28, 2023. Archived from the original original on March 28, 2023. Archived from the original 
Gupta, Maanak; Akiri, Charankumar; Aryal, Kshitiz; Parker, Eli; Praharaj, Lopamudra (2023). "From ChatGPT to ThreatGPT: Impact of Generative AI in Cybersecurity and Privacy". IEEE Access. 11: 80218-80245. arXiv:2307.00691. Bibcode:2023IEEEA..1180218G. doi:10.1109/ACCESS.2023.3300381. S2CID 259316122. ^ a b "Understanding the
source of what we see and hear online". OpenAI. May 7, 2024. Archived from the original on September 27, 2024. Archived from the original on September 30, 2024. Archived from the original on September 27, 2024. There's a Tool to Catch Students Cheating With ChatGPT. OpenAI won't watermark ChatGPT text
because its users could get caught". The Verge. Retrieved August 24, 2024. And Anthony (August 4, 2024). "OpenAI says it's taking a 'deliberate approach' to releasing tools that can detect writing from ChatGPT". TechCrunch. Retrieved October 1, 2024. Revšelj, Dejan; Keržič, Damijana; Tomaževič, Nina; Umek, Lan; Brezovar, Nejc; Aristovnik, Retrieved October 1, 2024. Retr
original on January 13, 2023. Retrieved December 31, 2023. Retrieved March 23, 2023. Archived from the original on March 23, 2023. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "OpenAI debuts ChatGPT subscription aimed at small teams". TechCrunch. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "Introducing ChatGPT subscription aimed at small teams". TechCrunch. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "Introducing ChatGPT subscription aimed at small teams". TechCrunch. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "Introducing ChatGPT subscription aimed at small teams". TechCrunch. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "Introducing ChatGPT subscription aimed at small teams". TechCrunch. Retrieved May 26, 2025. ^ a b Ortiz, Sabrina or January 10, 2024. "Introducing ChatGPT subscription aimed at small teams".
 "Is ChatGPT Plus worth your $20? Here's how it compares to Free and Pro plans". ZDNET. Retrieved May 25, 2025. ^ a b c d Robison, Kylie (December 5, 2024). "OpenAI is charging $200 a month for an exclusive version of its o1
 'reasoning' model". The Verge. Retrieved December 5, 2024. ^ "GPT-4". openai.com. March 14, 2023. Archived from the original on March 14, 2023. Archived from the original on March 14, 2023. Retrieved March 19, 2023. Retrieved 
2023. ^ Wiggers, Kyle (March 23, 2023). "OpenAI connects ChatGPT to the internet". Archived from the original on June 12, 2023. A David, Emilia (September 20, 2023). "OpenAI releases third version of DALL-E". The Verge. Archived from the original on September 20, 2023. Retrieved September 23, 2023. ^ Metz, Cade;
 Hsu, Tiffany (September 20, 2023). "ChatGPT Can Now Generate Images, Too". The New York Times. ISSN 0362-4331. Archived from the original on September 23, 2023. A "OpenAI to introduce ChatGPT app for iOS". Reuters. May 18, 2023. Retrieved May 25, 2025. A Lawler, Richard (July 21, 2023). "ChatGPT for
Android launches next week". The Verge. Archived from the original on July 22, 2023. Retrieved July 27, 2023. A Field, Hayden (July 25, 2023. A Field, Hayden (July 27, 2023. A Field, Hayden (July 27, 2023. A Field, Hayden (July 28, 2023).
Here's how". ZDNET. Retrieved May 25, 2025. ^ Roth, Emma (March 13, 2023). "Microsoft spent hundreds of millions of dollars on a ChatGPT supercomputer". The Verge. Archived from the original on March 30, 2023. Retrieved May 25, 2025. ^ "TrendForce Says with Cloud Companies Initiating AI Arms Race, GPU Demand from ChatGPT Could
 Reach 30,000 Chips as It Readies for Commercialization". TrendForce. March 1, 2023. Archived from the original on November 2, 2023. Retrieved 
 November 2, 2023. ^ "Artificial intelligence technology behind ChatGPT was built in Iowa — with a lot of water". AP News. September 10, 2023. Archived from the original on September 10, 2023. Archived from the original origi
 bias". The Conversation. Retrieved October 26, 2024. ^ Magnússon, Pétur (March 15, 2023). "Icelandic becomes ChatGPT's second language". Rúv. Archived from the original on March 31, 2023. ^ Kaneko, Karin (July 18, 2023). "ChatGPT, Bing, Bard and DeepL: Which one offers the best Japanese-to-English translation?"
The Japan Times. Archived from the original on October 4, 2023. Retrieved July 22, 2023. A Taylor, Alice (December 13, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. A Taylor, Alice (December 14, 2023). Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT". Euractiv. Archived from the original on December 14, 2023. Taylor, Alice (December 14, 2023). "Albania to speed up EU accession using ChatGPT".
PCMAG. Archived from the original on June 10, 2023. Retrieved June 10, 2023. A "OpenAI亞太區公共政策總監造訪政大 探索人文AI的未來與可能性". National Chengchi University, Office of International Cooperation (in Chinese). August 25, 2024. Archived from the original on August 24, 2024. Retrieved August 25, 2024. ^ "OpenAI亞太區公共政策總監造訪政大 探索人文AI的未來與可能性". National Chengchi University, Office of International Cooperation (in Chinese). August 25, 2024. Archived from the original on August 24, 2024. Retrieved August 25, 2024. ^ "OpenAI亞太區公共政策。
 "OpenAI高層訪台 ChatGPT講中文超順還能用台灣腔【獨家】". Central News Agency (in Chinese). Archived from the original on August 27, 2024. A "Introducing GPTs". OpenAI Unveils App Store for Customized Versions of ChatGPT". The New York Times. Archived
from the original on February 7, 2024. Retrieved January 13, 2024. ^ a b David, Emilia (January 10, 2024). "OpenAI's custom GPT Store is now open for business". The Verge. Archived from the original on February 18, 2024. A Shankland, Stephen (January 10, 2024). "OpenAI's GPT Store Now Offers a Selection of 3
Million Custom AI Bots". CNET. Archived from the original on February 8, 2024. Retrieved January 13, 2024. Archived from the original on February 17, 2024. Retrieved January 13, 2024. Archived from the original on February 17, 2024. Retrieved January 18, 2024. Archived from the original on February 17, 2024. Retrieved January 18, 2024. Archived from the original on February 17, 2024. Retrieved January 18, 2024. Archived from the original on February 18, 2024. Archived from 
professional benchmarks". Ars Technica. Archived from the original on March 14, 2023. Retrieved March 15, 2023. A Belfield, Haydn (March 25, 2023). "If your AI model is going to sell, it
 has to be safe". Vox. Archived from the original on March 28, 2023. Retrieved March 30, 2023. ^ "GPT-4V(ision) system card". OpenAI. Retrieved February 5, 2024. ^ Roose, Kevin (September 28, 2023). "The New ChatGPT Can 'See' and 'Talk.' Here's What It's Like". The New York Times. Archived from the original on October 31, 2023. Retrieved
October 30, 2023. ^ Vincent, James (March 15, 2023). "OpenAI co-founder on company's past approach to openly sharing research: "We were wrong"". The Verge. Archived from the original on March 17, 2023. Retrieved March 18, 2023. ^ Drapkin, Aaron (November 7, 2023). "GPT-4 Turbo vs GPT-4: What Is OpenAI's ChatGPT Turbo?". Tech.co.
Archived from the original on May 14, 2024. Retrieved May 13, 2024. a b Wiggers, Kyle (May 13, 2024. a b Wiggers, Kyle (May 13, 2024. a b Wiggers, Kyle (May 13, 2024. a chairment of the original on May 14, 2024. a b Wiggers, Kyle (May 13, 2024. a chairment of the original on May 14, 2024. a b Wiggers, Kyle (May 13, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. a chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment of the original on May 14, 2024. A chairment o
2025. ^ Colburn, Thomas. "OpenAI unveils GPT-4o, a fresh multimodal AI flagship model". The Register. Retrieved May 18, 2024. ^ Field, Hayden (May 13, 2024). "OpenAI launches new AI model GPT-4o and desktop version of ChatGPT". CNBC. Retrieved May 14, 2024. ^ Rogers, Reece. "I Used ChatGPT's Advanced Voice Mode. It's Fun, and Just a continuous formula and the second seco
Bit Creepy". Wired. ISSN 1059-1028. Retrieved June 12, 2025. ^ Edwards, Benj (July 18, 2024). "OpenAI launches GPT-40 mini, which will replace GPT-3.5 in ChatGPT". Ars Technica. Retrieved June 12, 2025. ^ "ChatGPT". Ars Technica. Retrieved June 12, 2025. ^ a b Edwards, Benj (July 18, 2024). "OpenAI launches GPT-40 mini, which will replace GPT-3.5 in ChatGPT".
(September 12, 2024). "OpenAI's new "reasoning" AI models are here: o1-preview and o1-mini". Ars Technica. Retrieved September 13, 2024. ^ Franzen, Carl (December 5, 2024). "OpenAI launches full o1 model with image uploads and analysis, debuts ChatGPT Pro". VentureBeat. Retrieved December 7, 2024. ^ "Introducing OpenAI o1-preview"
OpenAI. September 12, 2024. ^ Ha, Anthony (February 3, 2025). "OpenAI unveils a new ChatGPT agent for 'deep research'". TechCrunch. Archived from the original on May 4, 2025. A b Novet, Jordan (February 27, 2025). "OpenAI launching GPT-4.5, its next general-purpose large language model". CNBC. Retrieved
March 1, 2025. ^ "Introducing GPT-4.5". OpenAI. February 27, 2025. Retrieved February 27, 2025. Retrieved February 8, 2023. ^ Achille, Belelli (June 20, 2024). "ChatGPT Come Funziona". FinanzaDigitale (in Italian). Archived from the original on August 27, 2024
 Retrieved June 21, 2024. ^ Goldman, Sharon (May 30, 2023). "ChatGPT launched six months ago. Its impact — and fallout — is just beginning | The AI Beat". VentureBeat. Retrieved May 25, 2025. ^ Field, Hayder
(May 13, 2024). "OpenAI launches new AI model GPT-40 and desktop version of ChatGPT". CNBC. Archived from the original on May 22, 2024. Retrieved July 18, 2024). "OpenAI unveils GPT-40 mini — a smaller, much cheaper multimodal AI model". VentureBeat. Archived from the original on July 18, 2024. Retrieved
July 21, 2024. ^ a b Wiggers, Kyle (September 12, 2024). "OpenAI unveils o1, a model that can fact-check itself". TechCrunch. Archived from the original on September 13, 2024. ^ a b Franzen, Carl (January 31, 2025). "It's here: OpenAI's o3-mini advanced reasoning model arrives to counter DeepSeek's rise".
VentureBeat. Retrieved February 1, 2025. ^ Zeff, Maxwell (May 14, 2025). "OpenAI brings its GPT-4.1 and 4.1 mini to ChatGPT". TechCrunch. Retrieved May 25, 2025. ^ Franzen, Carl (May 14, 2025). "OpenAI brings GPT-4.1 and 4.1 mini to ChatGPT". TechCrunch. Retrieved May 27, 2025. ^ Peters, Jay (April 16, 2025).
 "OpenAI's upgraded o3 model can use images when reasoning". The Verge. Retrieved April 28, 2025. ^ a b Zeff, Maxwell (April 16, 2025). "OpenAI o3 and o4-mini". openai.com. Retrieved April 28, 2025. ^ Wiggers, Kyle (June
10, 2025). "OpenAI releases o3-pro, a souped-up version of its o3 AI reasoning model". TechCrunch. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025. ^ "ChatGPT Supported Countries". help.openai.com. Retrieved June 4, 2025.
 December 18, 2022. ^ a b Piper, Kelsey (December 15, 2022). "The ChatGPT chatbot is blowing people away with its writing skills. An expert explains why
it's so impressive". The Conversation. Archived from the original on January 19, 2023. Retrieved December 30, 2022. ^ Chow, Andrew; Perrigo, Billy (February 16, 2023). "The AI Arms Race Is On. Start Worrying". Time. Archived from the original on February 16, 2023. A conversation. Archived from the original on January 19, 2023. A conversation. Archived from the original on February 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying". Time. Archived from the original on January 19, 2023. The AI Arms Race Is On. Start Worrying".
Americans have heard of ChatGPT, but few have tried it themselves". Pew Research Center. Archived from the original on June 8, 2023. Retrieved June 15, 2023. Retrieved June 16, 2023. Retrieved June 17, 2023. Retrieved June 18, 2023. Retrieved Jun
original on December 24, 2023. Retrieved December 23, 2023. ^ McClain, Colleen (March 26, 2024). "Americans' use of ChatGPT turns 1: How the AI chatbot has completely changed the world". euronews. November 30, 2023. Archived
 from the original on January 14, 2024. Retrieved March 1, 2024. A Heaven, Will Douglas. "The inside story of how ChatGPT was built from the original on March 6, 2023. A Simons, John (February 5, 2023). "The Creator of ChatGPT Thinks AI Should Be
 Regulated". Time. Archived from the original on March 8, 2023. Retrieved March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on February 18, 2024. Retrieved May 24, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on February 18, 2024. Retrieved May 24, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on February 18, 2024. Retrieved May 24, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". bloomberg.com. Archived from the original on March 21, 2023. Cowen, Tyler (May 23, 2023). "ChatGPT Is Also an Impressive Feat of Marketing". ChatGPT Is Also an Impressive Feat of Marketing". ChatGPT Is Also an Impressive Feat of Marketing". ChatGPT Is Also an Impressive Feat of Marketing 
AI, OpenAI, and ... Did We Mention AI?". Wired. Archived from the original on September 11, 2023. Retrieved September 12, 2023. Archived from the original on December 21, 2022. Retrieved Search Business". The New York Times. ISSN 0362-4331. Archived from the original on December 21, 2022. Retrieved September 12, 2023. Archived from the original on December 21, 2023. Archived fr
December 30, 2022. ^ Alba, Davey; Love, Julia (February 6, 2023). "Google releases ChatGPT rival AI 'Bard' to early testers". Los Angeles Times. ISSN 0458-3035. Archived from the original on February 6, 2023. Archived from the original o
from the original on May 10, 2023. Retrieved September 12, 2023. ^ a b Cain, Sian (January 16, 2023). "'This song sucks': Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song written in the style of Nick Cave responds to ChatGPT song w
song in the style of Nick Cave, and this is what it produced. What do you think?". The Red Hand Files. Issue #218. Archived from the original on January 20, 2023. A strieved January 20, 2023. A sparrow, Jeff (January 20, 2023). "Are AI-generated songs a 'grotesque mockery' of humanity or simply an opportunity to make a new kind of music?". The
Guardian. Archived from the original on February 3, 2023. Retrieved January 20, 2023. ^ Van Noorden, Richard; Webb, Richard; W
Mediavilla, Daniel (December 13, 2023). "La revista 'Nature' elige por primera vez entre sus científicos del año a un ente no humano: ChatGPT". El País (in European Spanish). Archived from the original on December 15, 2023. Retrieved December 16, 2023. A Biever, Celeste (July 25, 2023). "ChatGPT broke the Turing test — the race is on for new
 ways to assess AI". Nature. 619 (7971): 686-689. Bibcode: 2023Natur. 619.. 686B. doi: 10.1038/d41586-023-023Candering finds ChatGPT's latest bot behaves like humans, only better | Stanford School of Humanities and Sciences".
 humsci.stanford.edu. Archived from the original on March 26, 2024. Retrieved March 26, 2024. Nei, Qiaozhu; Xie, Yutong; Yuan, Walter; Jackson, Matthew O. (February 27, 2024). "A Turing test of whether AI chatbots are behaviorally similar to humans". Proceedings of the National Academy of Sciences. 121 (9): e2313925121
 Bibcode: 2024PNAS.. 12113925M. doi: 10.1073/pnas. 2313925121. ISSN 0027-8424. PMC 10907317. PMID 38386710. ^ Kantrowitz, Alex (December 2, 2022). "Finally, an A.I. Chatbot That Reliably Passes "the Nazi Test"". Slate. Archived from the original on January 17, 2023. Retrieved December 5, 2022. ^ Karp, Paul (February 6, 2023). "MP tells
 Australia's parliament AI could be used for 'mass destruction' in speech part-written by ChatGPT". The Guardian. ISSN 0261-3077. Archived from the original on February 6, 2023. Retrieved February 6, 2023. Archived from the original on February 6, 2023. Retrieved February 6, 2023. Archived from the original on February 6, 2023. Retrieved February 6, 2023. Archived from the original on February 6, 2023. Archived from the original on February 6, 2023. Retrieved February 6, 2023. Archived from the original on February 6, 2023. Archived from the original origi
the original on March 1, 2023. Retrieved March 1, 2023. A b Vincent, James (February 9, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original on March 1, 2023. A b Vincent, James (February 17, 2023). "Is ChatGPT liberal or conservative? Depends who you ask". Boston Globe. Archived from the original or conservative? Depends who you ask". Boston Globe. Archived from the original or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "Is ChatGPT liberal or conservative? Depends who you ask "
 answering culture war queries". The Verge. Archived from the original on March 1, 2023. Retrieved March 1, 2023. Active on ChatGPT's pro-environmental, left-libertarian orientation". arXiv:2301.01768 [cs.CL].
Motoki, Fabio; Neto, Valdemar Pinho; Rodrigues, Victor (August 17, 2023). "More human than human: measuring ChatGPT and other Al (1-2): 3-23. doi:10.1007/s11127-023-01097-2. ISSN 1573-7101. ^ Chiu, Joanna (September 18, 2024). "New data reveals exactly when the Chinese government blocked ChatGPT and other Al
sites". ^ Chen, Caiwei (March 7, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 23, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2023). "China's ChatGPT Black Market Is Thriving". Wired. Retrieved June 1, 2025. ^ Ye, Josh (February 12, 2025). ^ Ye, Josh (February 12, 2025). ^ Ye, Josh (February 12, 2025). ^ Ye, Josh (Febr
access to ChatGPT". The Guardian. Archived from the original on June 14, 2023. A He Qitong; Li Dongxu (May 31, 2024). The Idea of China: Chinese Thinkers on Power, Progress
and People (EPUB). Berlin, Germany: European Council on Foreign Relations. ISBN 978-1-916682-42-9. Archived from the original on July 17, 2024. Retrieved July 22, 2024. ^ Metz, Cade (February 21, 2025). "OpenAI Uncovers Evidence of A.I.-Powered Chinese Surveillance Tool". The New York Times. ISSN 0362-4331. Retrieved February 22, 2025.
 ^ Fried, Ina (February 21, 2025). "OpenAI finds new Chinese influence campaigns using its tools". Axios. Retrieved February 22, 2025. ^ "ChatGPT banned in Italy over privacy concerns". BBC News. March 31, 2023. Archived from the original on March 31, 2023. Retrieved March 31, 2023. ^ Borrelli, Silvia Sciorilli; Murgia, Madhumita (March 31, 2023).
 2023). "Italy temporarily bans ChatGPT over privacy concerns". Financial Times. Archived from the original on March 31, 2023. A getrieved May 1, 2
tied to Russia, China and Israel". NPR. Archived from the original on May 30, 2024. Retrieved May 30, 2024. Retrieved June 5, 2024. ^ Tong, Anna
(June 6, 2025). "OpenAI finds more Chinese groups using ChatGPT for malicious purposes". Reuters. Retrieved June 7, 2023. A Cakrzewski, Cat (July 13, 2023). "The FTC is investigating whether
ChatGPT harms consumers". The Washington Post. Archived from the original on July 13, 2023. Retrieved July 13, 2023. Retr
Feiner, Lauren (July 13, 2023). "FTC investigating ChatGPT-maker OpenAI for possible consumer harm". CNBC. Archived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. The chived from the original on July 13, 2023. A chived from the original on July 13, 2023. The chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. The chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023. A chived from the original on July 13, 2023
Rebecca (August 14, 2024). "FTC bans fake online reviews, inflated social media influence; rule takes effect in October". CNBC. Archived from the original on August 15, 2024. Retrieved August 15, 2024. Retrieved August 16, 2024. Retrieved August 17, 2024. Retrieved August 18, 2024. Retrieved August 19, 2024. Retrieve
Archived from the original on January 16, 2023. Retrieved December 30, 2022. ^ a b Kay, Grace (December 11, 2023). "Elon Musk founded - and has since criticized - the company behind the buzzy new AI chatbot ChatGPT. Here's everything we know about OpenAI". Business Insider. Archived from the original on January 12, 2023. Retrieved
December 30, 2022. A Hurst, Luke (March 30, 2023) [March 29, 2023]. "'Profound risk to humanity': Tech leaders call for 'pause' on advanced AI development". Euronews. Archived from the original on April 1, 2023. Setrieved April 1, 2023. A "Geoffrey Hinton tells us why he's now scared of the tech he helped build". MIT Technology Review.
Archived from the original on May 4, 2023. Retrieved May 4, 2023. Re
4331. Archived from the original on May 31, 2023. Retrieved May 30, 2023. A Taylor, Josh (May 7, 2023). "Rise of artificial intelligence is inevitable but should not be feared, 'father of AI' says". The Guardian. Archived from the original on October 23, 2023. Retrieved May 26, 2023. A Common May 31, 2023. A Common May 31, 2023. The Guardian May 31, 2023. The Guardian May 31, 2023. A Common May 31, 2023. The Guardian May 31, 2023. The Guardian May 31, 2023. The Guardian May 32, 2023. A Common May 31, 2023. A Common May 31, 2023. The Guardian May 32, 2023.
the world is better off with more or less intelligence?". Financial Times. Archived from the original on January 25, 2024. Retrieved December 30, 2023. ^ Levy, Steven (December 22, 2023). "How Not to Be Stupid About AI, With Yann LeCun". Wired. Archived from the original on February 14, 2024. Retrieved December 30, 2023. ^ Levy, Steven (December 22, 2023). "How Not to Be Stupid About AI, With Yann LeCun". Wired. Archived from the original on February 14, 2024. Retrieved December 30, 2023. ^ Levy, Steven (December 22, 2023). "How Not to Be Stupid About AI, With Yann LeCun". Wired. Archived from the original on February 14, 2024. Retrieved December 30, 2023. ^ Levy, Steven (December 30, 2023. ^ Levy, Steven (
Intelligence Copyright Challenges in US Courts Surge". www.natlawreview.com. Retrieved March 19, 2024. ^ "Primer: Training AI Models with Copyrighted Work". AAF. Retrieved March 19, 2024. ^ Gao, Catherine A.; Howard, Frederick M.; Markov, Nikolay S.; Dyer, Emma C.; Ramesh, Siddhi; Luo, Yuan; Pearson, Alexander T. (April 26, 2023)
 "Comparing scientific abstracts generated by ChatGPT to real abstracts with detectors and blinded human reviewers". npj Digital Medicine. 6 (1): 75. doi:10.1038/s41746-023-00819-6. ISSN 2398-6352. PMC 10133283. PMID 37100871. ^ Bushard, Brian (January 10, 2023). "Fake Scientific Abstracts Written By ChatGPT Fooled Scientists, Study
Finds". Forbes, Archived from the original on February 3, 2023. Retrieved January 30, 2023. ^ Stokel-Walker, Chris (January 18, 2023). "ChatGPT listed as author on research papers: many scientists disapprove". Nature. 613 (7945): 620-621. Bibcode: 2023Natur. 613...620S. doi:10.1038/d41586-023-00107-z. PMID 36653617. S2CID 255969365.
Archived from the original on January 30, 2023. Retrieved January 30, 2023. Almira Osmanovic Thunström and Steinn Steingrimsson of the University of Gothenburg used GPT-3 in June 2022 to write an academic paper about itself. They found that using specific prompts the results were good if
somewhat shallow and not self-critical enough. Also only few references were presented, some of them nonsensical. Can GPT-3 write an academic paper on itself, with minimal human input? Archived October 24, 2023, at the Wayback Machine. 2022. ffhal-03701250 ^ Brainard, Jeffrey (February 22, 2023). "As scientists explore AI-written text,
journals hammer out policies". Science. doi:10.1126/science.adh2937. Archived from the original on February 24, 2023. Retrieved February 24, 2023. Retrieved February 24, 2023. ^ Ansede, Manuel (April 2, 2023). "One of the world's most cited scientists, Rafael Luque, suspended without pay for 13 years". EL PAÍS English. Archived from the original on April 11, 2023. Retrieved
 April 11, 2023. Alkaissi, Hussam; McFarlane, Samy I.; Alkaissi, Hussam; McFarlane, Samy I.; Alkaissi, Hussam; McFarlane, Samy I. (February 19, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. ISSN 2168-8184. PMC 9939079. PMID 36811129. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallucinates, and I. (2): e35179. Vynck, Gerrit De (May 31, 2023). "ChatGPT 'hallu
Some researchers worry it isn't fixable". Washington Post. ISSN 0190-8286. Archived from the original on June 17, 2023. Retrieved June 14, 2023. Azamfirei, Razvan; Kudchadkar, Sapna R.; Fackler, James (March 21, 2023). "Large language models and the perils of their hallucinations". Critical Care. 27 (1): 120. doi:10.1186/s13054-023-04393-x.
ISSN 1364-8535. PMC 10032023. PMID 36945051. ^ Grove, Jack (April 5, 2023). "ChatGPT and AI Hallucination". Lemieux Library at Seattle University.
Archived from the original on February 18, 2024. Retrieved June 14, 2023. A Morrison, Ryan (August 8, 2023). "ChatGPT wrong over half the time on software questions". Tech Monitor. New Statesman Media Group. Archived from the original on December 5, 2023. Retrieved December 5, 2023. A Kabir, Samia; Udo-Imeh, David N.; Kou, Bonan;
Zhang, Tianyi (August 10, 2023). "Who Answers It Better? An In-Depth Analysis of ChatGPT and Stack Overflow Answers to Software Engineering Questions". arXiv:2308.02312v3 [cs.CL]. ^ a b Chen, Lingjiao; Zaharia, Matei; Zou, James (October 31, 2023). "How is ChatGPT's behavior changing over time?". arXiv:2307.09009v3 [cs.CL]. ^ Kashefi, Ali
Mukerji, Tapan (2023). "ChatGPT for Programming Numerical Methods". arXiv:2303.12093 [cs.LG]. ^ Vincent, James (December 5, 2022). "AI-generated answers temporarily banned on coding Q&A site Stack Overflow". The Verge. Archived from the original on January 17, 2023. Retrieved December 5, 2022. ^ Vincent, James (January 5, 2023). "Top
AI conference bans use of ChatGPT and AI language tools to write academic papers". The Verge. Archived from the original on June 14, 2023. Retrieved June 13, 2023. Retrieved June 13, 2023. Retrieved June 14, 2023. Retrieved June 18, 2023. Retrieved June 19, 2023. Retrieved June 29, 2023. Retriev
15, 2023. ^ Shimony, Eran; Tsarfati, Omer (January 17, 2023). "Chatting Our Way Into Creating a Polymorphic Malware". CyberArk. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". Infosecurity Magazine. Archived from the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). "ChatGPT Creates Polymorphic Malware". On the original on May 12, 2023. ^ Mascellino, Alessandro (January 18, 2023). ^ Mascellino, Alessandro (January 18, 2023). ^ Mascellino, Alessandro (January 18, 2023). ^ Mascellino, 
12, 2023. Retrieved May 12, 2023. Note of the original on December 5, 20
That Floods Your Screen With Fake Virus Warnings". Futurism. Archived from the original on July 1, 2024. A Shrikant, Aditi (July 17, 2023). "ChatGPT can match the top 1% of creative human thinkers, says new study". CNBC. Archived from the original on March 29, 2024. A Shrikant, Aditi (July 17, 2024). A Shrikant, Aditi (July 17, 2024). The top 1% of creative human thinkers, says new study". CNBC. Archived from the original on March 29, 2024. A Shrikant, Aditi (July 17, 2024). The top 1% of creative human thinkers, says new study".
2023). "AI already outscoring humans in creativity tests". cybernews. Archived from the original on March 29, 2024. Retrieved March 29, 2024. Retrieved March 29, 2024. A "Экономист Дарон Асемоглу написал книгу об угрозах искусственного интеллекта — и о том, как правильное управление может обратить его на пользу человечеству Спецкор "Медузы"
Маргарита Лютова узнала у ученого, как скоро мир сможет приблизиться к этой утопии". Meduza (in Russian). Archived from the original on June 21, 2023. Archived from the original on June 21, 2023. Archived from the original on June 21, 2023. Archived from the original on June 21, 2023.
2023. Retrieved June 21, 2023. Nolan, Beatrice. "More than 200 books in Amazon's bookstore have ChatGPT listed as an author or coauthor". Business Insider. Archived from the original on March 9, 2023. Retrieved March 9, 2023. Netrieved March 9, 2023. Retrieved March 9, 2023. Netrieved March 9, 2023. Retrieved March 9, 2
Archived from the original on March 9, 2023. Retrieved March 9, 2023. Archived from the original on March 9, 2023. Archived from the original on March 17, 2023. Archived from the original on March 9, 2023. Archived from the original on March 17, 2023. Archived from the original on March 17, 2023. Archived from the original on March 18, 2023.
March 22, 2023. Retrieved March 22, 2023. "ChatGPT on Il Foglio: per 30 giorni piccoli testi scritti dall'IA sul nostro giornale" [ChatGPT on Il Foglio: for 30 days, brief texts written by the AI on our newspaper]. Il Foglio (in Italian). March 7, 2023. Archived from the original on March 22, 2023. Retrieved March 22, 2023. Retrieved March 22, 2023. The AI on our newspaper of the AI on our newspa
2023). "Articoli artificiali? No" [Artificial articles? No]. Il Foglio (in Italian). Archived from the original on March 22, 2023. Retrieved March 22, 2023. Retrieved March 22, 2023. "Le colpe farlocche dell'"invasione"
[The fake faults of the "invasion"]. Il Foglio (in Italian). March 14, 2023. Archived from the original on June 13, 2023. Retrieved June 13, 2023. Retrieved March 22, 2023. Archived from the original on June 13, 2023. Retrieved June 13, 2023. Archived from the original on June 13, 2023. Retrieved June 13, 2023. Archived from the original on June 13, 2023. The original on June 13, 2023. Retrieved June 13, 2023. The original on June 13, 2023. Archived from the original on June 13, 2023. The original original on June 13, 2023. The original 
 Protestants attended a sermon in Nuremberg given by ChatGPT, which told them not to fear death". Business Insider. Archived from the original on June 12, 2023. Retrieved June 13, 2023. Archived from the original on June 12, 2023. Retrieved June 13, 2023. ^ Kelly
James W (June 19, 2024). "Prince Charles Cinema drops AI-written film following backlash". BBC News. Archived from the original on June 19, 2024. The Guardian view on ChatGPT: an eerily good human impersonator". The Guardian. December 8, 2022. Archived from the original on June 19, 2024. Archived from the original on June 19, 2024. The Guardian view on ChatGPT: an eerily good human impersonator".
18, 2022. ^ Fox, Matthew (January 31, 2023). "C3ai has soared 86% year-to-date as investor frenzy for artificial intelligence builds amid ChatGPT success". Markets Insider (Business Insider). Archived from the original on February 18, 2023. A Diaz, Alicia; Smith, Gerry (January 26, 2023). "BuzzFeed Shares Surge 120% on
Plans to Embrace OpenAI". Bloomberg.com. Retrieved May 22, 2023. ^ a b Singh, Medha; Biswas, Ankika (February 6, 2023). "Al stocks rally in latest Wall Street craze sparked by ChatGPT". Reuters. Archived from the original on March 29, 2023. Retrieved April 14, 2023. ^ Saggu, Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). "The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023)." The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). The influence of ChatGPT on March 29, 2023. Aman; Ante, Lennart (May 8, 2023). Aman; Ante, Lennart
artificial intelligence-related crypto assets: Evidence from a synthetic control analysis". Finance Research Letters. 55: 103993. arXiv:2305.12739. doi:10.1016/j.frl.2023.103993. ISSN 1544-6123. S2CID 258573881. Algiric, Vildana; Shen, Muyao (February 9, 2023). "ChatGPT Mania Spurs Crypto Fans' Stampede to 'Faddish' AI Tokens"
Bloomberg.com. Archived from the original on February 9, 2023. Retrieved April 14, 2023. ^ Cooban, Anna (May 5, 2023). "ChatGPT can pick stocks better than your fund manager". CNN. Archived from the original on May 22, 2023. Retrieved May 5, 2023. ^ Cooban, Anna (May 5, 2023). "AI Can Write a Song, but It Can't Beat the Market"
The Wall Street Journal. News Corp. Archived from the original on May 30, 2023. Retrieved May 30, 2023. Archived from the original Health. 5 (3): e102. doi:10.1016/S2589-7500(23)00023-7. PMID 36754723. S2CID 256659547. Asch, David A. (April 4, 2023). "An Interview with
ChatGPT About Health Care". NEJM Catalyst Innovations in Care Delivery. 4 (2). doi:10.1056/CAT.23.0043 (inactive June 29, 2023. Retrieved June 29,
Exam". MedPage Today. Archived from the original on April 9, 2023. Retrieved May 2, 2023. A Kung, Tiffany H.; Cheatham, Morgan; Medenilla, Arielle; Sillos, Czarina; Leon, Lorie De; Elepaño, Camille; Madriaga, Maria; Aggabao, Rimel; Diaz-Candido, Giezel; Maningo, James; Tseng, Victor (February 9, 2023). "Performance of ChatGPT on USMLE:
Potential for AI-assisted medical education using large language models". PLOS Digital Health. 2 (2): e0000198. doi:10.1371/journal.pdig.0000198. ISSN 2767-3170. PMC 9931230. PMID 36812645. ^ "Expert reaction to study on ChatGPT almost passing the US Medical Licensing Exam". Science Media Centre. February 9, 2023. Archived from the
original on April 24, 2023. Retrieved May 2, 2023. ^ a b c Gilson, Aidan; Safranek, Conrad W.; Huang, Thomas; Socrates, Vimig; Chi, Ling; Taylor, Richard Andrew; Chartash, David (February 8, 2023). "How Does ChatGPT Perform on the United States Medical Licensing Examination? The Implications of Large Language Models for Medical Education
and Knowledge Assessment". JMIR Medical Education. 9 (1): e45312. doi:10.2196/45312. PMC 9947764. PMID 36753318. ^ Brueck, Hilary. "The newest version of ChatGPT passed the US medical licensing exam with flying colors — and diagnosed a 1 in 100,000 condition in seconds". Business Insider. Archived from the original on January 27, 2024.
Retrieved February 2, 2024. ^ Pressman, Aaron (November 8, 2023). "The AI boom is shaking up the tech industry and moving markets. But is it all a mirage?". The Boston Globe. Archived from the original on December 5, 2023. A etrieved December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe. Archived from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Original on December 5, 2023. The Boston Globe from the Ori
Clinical Toxicology". JMIR Medical Education. 9 (1): e46876. doi:10.2196/46876. PMC 10034604. PMID 36867743. ^ Haver, Hana L; Ambinder, Emily B; Bahl, Manisha; Oluyemi, Eniola T; Jeudy, Jean; Yi, Paul H (April 4, 2023). "Appropriateness of Breast Cancer Prevention and Screening Recommendations Provided by ChatGPT". Radiology. 307 (4):
230424. doi:10.1148/radiol.230424. ISSN 0033-8419. PMID 37014239. S2CID 257923990. Archived from the original on May 5, 2023. Retrieved May 5, 2023. Retrieved May 5, 2023. Archived from the original on May 5, 2023. Retrieved May 5, 2023. Period of Medicine Study Finds ChatGPT Helpful for Breast Cancer Screening Advice, With Certain Caveats. University of Maryland School of Medicine.
Archived from the original on May 5, 2023. Retrieved May 5, 2023. Ayers, John W.; Poliak, Adam; Dredze, Mark; Leas, Eric C.; Zhu, Zechariah; Kelley, Jessica B.; Faix, Dennis J.; Goodman, Aaron M.; Longhurst, Christopher A.; Hogarth, Michael; Smith, Davey M. (April 28, 2023). "Comparing Physician and Artificial Intelligence Chatbot Responses to
Patient Questions Posted to a Public Social Media Forum". JAMA Internal Medicine. 183 (6): 589-596. doi:10.1001/jamainternmed.2023.1838. ISSN 2168-6106. PMC 10148230. PMID 37115527. ^ Fox, Andrea (May 4, 2023). "Does ChatGPT really outshine doctors? Or just on social media?". Healthcare IT News. HIMSS Media. Archived from the
original on May 4, 2023. Retrieved May 5, 2023. Archived from the original on May 5, 2023. Archived from the original or
```

```
to Patient Questions". UC San Diego Today. Archived from the original on April 28, 2023. Archived from the original on May 3, 2023. Archived from the original on May 3, 2023. Archived from the original on April 28, 2023. Archived from the original on May 3, 2023. Archived from the original on May 3, 2023. Archived from the original on April 28, 2023. Archived from the original on May 3, 2023. Archived from the original original on May 3, 2023. Archived from the original original original original original original original original ori
(April 2023). "ChatGPT and antimicrobial advice: the end of the consulting infection doctor?". The Lancet Infectious Diseases. 23 (4): 405-406. doi:10.1016/s1473-3099(23)00113-5. ISSN 1473-3099(23)00113-5. ISSN
Healthcare?". Physician's Weekly. April 27, 2023. Archived from the original on May 5, 2023. Archived from the original original on May 5, 2023. Archived 
(September 1, 2023). "Learning to Fake It: Limited Responses and Fabricated References Provided by ChatGPT for Medical Questions". Mayo Clinic Proceedings: Digital Health. 1 (3): 226-234. doi:10.1016/j.mcpdig.2023.05.004. ISSN 2949-7612. PMC 11975740. PMID 40206627. ^ Hughes, Stephen (April 27, 2023). "How good is ChatGPT at
 diagnosing disease? A doctor puts it through its paces". The Conversation. Archived from the original on May 4, 2023. Retrieved May 5, 2023. ^ Patnaik, Sourav S.; Hoffmann, Ulrike (November 7, 2023). "Quantitative evaluation of ChatGPT versus Bard responses to anaesthesia-related queries". British Journal of Anaesthesia. 132 (1): S0007-
0912(23)00550-0. doi:10.1016/j.bja.2023.09.030. ISSN 1471-6771. PMC 11837762. PMID 37945414. S2CID 265078930. Constantino, Annika Kim (December 5, 2023). "Free ChatGPT may incorrectly answer drug questions, study says". CNBC. Archived from the original on December 5, 2023. Retrieved December 5, 2023. Constantino, Annika Kim (December 5, 2023). "Free ChatGPT may incorrectly answer drug questions, study says".
 Provides Inaccurate Responses to Drug Questions" (Press release). PR Newswire. December 5, 2023. Archived from the original on December 5, 2023. Retrieved December 5, 2023. Archived from the original on December 5, 2023. Retrieved December 5, 2023. Archived from the original on December 5, 2023. Retrieved December 5, 2023. Archived from the original on December 5, 2023. Archived from the original or
Model in Pediatric Case Studies". JAMA Pediatrics. 178 (3): 313-315. doi:10.1001/jamapediatrics. 2023.5750. ISSN 2168-6203. PMC 10762631. PMID 38165685. Archived from the original on February 18, 2024. Retrieved February 18, 2024. Retrieved February 18, 2024. PMID 38165685. Archived from the original on February 18, 2024. Retrieved February 18, 2024. Retrieved February 18, 2024. PMID 38165685. Archived from the original on February 18, 2024. Retrieved February 18, 2024. Retri
Ars Technica. Archived from the original on January 17, 2024. Retrieved January 5, 2024. A Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2024. The New York Times. ISSN 0362-4331. Retrieved February 17, 2024. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2024. The New York Times. ISSN 0362-4331. Retrieved February 17, 2024. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 17, 2025. The New York Times. ISSN 0362-4331. Retrieved February 18, 2025. The New York Times. ISSN 0362-4331. Retri
 December 7, 2023. ^ a b Annear, Steve (January 24, 2023). "Two elected officials drafted legislation to regulate artificial intelligence technology — with some help from ChatGPT". The Boston Globe. Archived from the original on December 7, 2023. ^ a b Garrity, Kelly; Kashinsky, Lisa (July 13, 2023). "ChatGPT enters the
legislative chat". POLITICO. Archived from the original on December 7, 2023. Retrieved December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. Retrieved December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. Partieved December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. Partieved December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the original on December 7, 2023. ^ "Bill S.2539". malegislature.gov. Retrieved from the Original origina
June 12, 2025. ^ "Pakistani judge uses ChatGPT to make court decision". Gulf News. April 13, 2023. Archived from the original on April 20, 2023. Archived from t
 Retrieved April 20, 2023. ^ Maruf, Ramishah (May 27, 2023). "Lawyer apologizes for fake court citations from ChatGPT and now has to answer for its 'bogus' citations". The Verge. Retrieved April 25, 2025. ^ Brodkin, Jon (June 23, 2023).
 "Lawyers have real bad day in court after citing fake cases made up by ChatGPT". Ars Technica. Archived from the original on January 26, 2024. Retrieved February 18, 2024. ^ Goswami, Rohan (May 30, 2023). "ChatGPT". Ars Technica Archived from the
original on May 30, 2023. Retrieved May 30, 2023. A retrieved May 30, 2023. A retrieved Movember 8, 2023. A retrieved Movember
 Retrieved February 13, 2024. ^ "'Use with caution': How ChatGPT landed this US lawyer and his firm in hot water". ABC News. June 24, 2023. Archived from the original on November 9, 2023. Archived from the original on March 16, 2024. On the original on November 9, 2024. 
2025. Retrieved April 25, 2025. ^ Merken, Sara (July 29, 2024). "Lawyers using AI must heed ethics rules, ABA says in first formal guidance". Reuters. Retrieved April 24, 2025. ^ a b Jeantet, Diane; Savarese, Mauricio; LeBlanc, Steve; O'Brien, Matt (November 30, 2023). "Brazilian city enacts an ordinance that was secretly written by ChatGPT". AP
News. Associated Press. Archived from the original on December 7, 2023. Retrieved December 7, 2023. A b Paúl, María Luisa (December 4, 2023). "A Brazilian city passed a law about water meters. ChatGPT wrote it". Washington Post. ISSN 0190-8286. Archived from the original on December 7, 2023. Retrieved December 7, 2023. A capture of the original on December 7, 2023. The original on December 8, 2023. The original on December 8, 2023. The original on December 9, 2023. The original original on December 9, 2023. The original origi
por inteligência artificial é aprovada por vereadores em Porto Alegre; 'precedente perigoso', diz presidente da Câmara". G1 (in Brazilian Portuguese). November 7, 2023. Archived from the original on December 7, 2023. Retrieved December 7, 2023. Archived from the original on December 7, 2023. The presidente da Câmara (in Brazilian Portuguese). November 29, 2023. Archived from the original on December 7, 2023. Archived from the original on December 7, 2023. The presidente da Câmara (in Brazilian Portuguese) archived from the original on December 7, 2023. Archived from the original on December 7, 2023. Archived from the original on December 7, 2023. The presidente da Câmara (in Brazilian Portuguese) archived from the original on December 7, 2023. Archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original on December 7, 2023. The presidente data (in Brazilian Portuguese) archived from the original orig
 tribunal". Legal Futures. Archived from the original on May 14, 2024. Retrieved May 14, 2024. Actrieved May 14, 2024. Actrieve
UKFTT 1007 (TC)". BAILII. December 4, 2024. Archived from the original on May 14, 2024. Archived from the original on June 5, 2024. Retrieved June 5, 2024. Archived from the original on June 5, 2024
appeals judge says ChatGPT research 'less nutty' than feared". ABA Journal. Archived from the original on June 6, 2024. Retrieved June 6, 2024. Retrie
Cramer, Mackenzie; Soni, Sandeep; Bamman, David (April 28, 2023). "Speak, Memory: An Archaeology of Books Known to ChatGPT/GPT-4". arXiv:2305.00118 [cs.CL]. Cowen, Tyler; Tabarrok, Alexander T. (March 17, 2023). "How to Learn and Teach Economics with Large Language Models, Including GPT". SSRN 4391863. Cowen, Tyler (March 29, 2023).
2023). "Jonathan GPT Swift on Jonathan Swift (Ep. 175): How well does GPT4 do pretending to be the 18th-century satirist?" (Podcast). Ouyang, Long; et al. (March 4, 2022). "Training language models to follow instructions with human feedback". arXiv:2203.02155 [cs.CL]. Liebrenz, Michael; Schleifer, Roman; Buadze, Anna; Bhugra, Dinesh; Smith,
Alexander (February 2023). "Generating scholarly content with ChatGPT: ethical challenges for medical publishing". The Lancet Digital Health. 5 (3): e105 - e106. doi:10.1016/s2589-7500(23)00019-5. ISSN 2589-7500. PMID 36754725. S2CID 256655912. Wolfram, Stephen (February 14, 2023). "What Is ChatGPT Doing ... and Why Does It Work?".
Stephen Wolfram Writings. Wolfram, Stephen (March 23, 2023). "ChatGPT". Columbia Journalism Review. Retrieved May 30, 2023. Zhao, Wayne Xin; et al. (2023). "A Survey of Large Language Models"
 arXiv:2303.18223 [cs.CL]. Prompt engineering guide from OpenAI Wikimedia Commons has media related to ChatGPT. Official website Retrieved from "2Real-time text-to-speech AI tool 15.aiScreenshot of the 15.ai web interface on May 23, 2025Type of siteArtificial intelligence, speech synthesis, generative artificial
intelligenceAvailable inEnglishOwner15Founder(s)15URL15.ai (redirects to 15.dev)CommercialNoRegistrationNoneLaunchedMarch 2020; 5 years ago (2020-03)Current statusActive My Little Pony: Equestria Girls (2013-2020)(List of animations) My
Little Pony: Pony Life (2020-2021)(List of episodes) CharactersMane Six Twilight Sparkle Rainbow Dash Pinkie Pie Applejack Fluttershy Rarity Main Supporting Spike Princess Cadance Shining Armor Recurring Characters Discord Starlight Glimmer Cutie Mark Crusaders The Great and Powerful Trixie Zecora
Antagonists Queen Chrysalis Lord Tirek Background/Fan Favorites Derpy Hooves Background Six The Wonderbolts Equestria Girls Sunset Shimmer Season 1 (2010-2011) "Friendship Is Magic" "The Ticket Master" "Applebuck Season" "Griffon the Brush Off" "Boast Busters" "Dragonshy" "Look Before You Sleep" "Bridle Gossip
 "Swarm of the Century" "Winter Wrap Up" "Call of the Cutie" "Fall Weather Friends" "Suited for Success" "Feeling Pinkie Keen" "Over a Barrel" "A Bird in the Hoof" "The Cutie Mark Chronicles" "Owl's Well That Ends Well" "Party of One" "The
 Best Night Ever" Season 2 (2011-2012) "The Return of Harmony" "Lesson Zero" "Luna Eclipsed" "Sisterhooves Social" "The Cutie Pox" "May the Best Pet Win!" "The Mysterious Mare Do Well" "Sweet and Elite" "Secret of My Excess" "Hearth's Warming Eve" "Family Appreciation Day" "Baby Cakes" "The Last Roundup" "The Super Speedy Cider
 Squeezy 6000" "Read It and Weep" "Hearts and Hooves Day" "A Friend in Deed" "Putting Your Hoof Down" "It's About Time" "Dragon Quest" "Hurricane Fluttershy" "Ponyville Confidential" "MMMystery on the Friendship Express" "A Canterlot Wedding" Season 3 (2012-2013) "The Crystal Empire" "One Bad Apple" "Magic Duel" "Spike at Your
Service" "Keep Calm and Flutter On" "Games Ponies Play" "Magical Mystery Cure" Season 4 (2013-2014) "Princess Twilight's Kingdom" Season 5 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Map" "Slice of Life" "Amending Fences" "Crusaders of the Lost Mark" "The Cutie Re-Mark" Season 6 (2015) "The Cutie Re-Mark" 
(2016) "A Hearth's Warming Tail" Season 7 (2017) "The Perfect Pear" Season 8 (2018) "Grannies Gone Wild" Season 9 (2019) "The Last Crusade" Series finale MediaFilms & specials My Little Pony: The Movie (2017) My Little Pony: Best Gift Ever (2018) My Little Pony: Best Gift Ever (2018) My Little Pony: Rainbow Roadtrip (2019) Music Movie Soundtrack "Rainbow" "Off to See the
 World" Games My Little Pony: Twilight Sparkle, Teacher for a Day Gameloft video game Collectible card game Other media Home video releases IDW comics Issues My Little Pony/Transformers Fandom 15.ai A Brony Tale Bronies (documentary) Brony music Bronyspeak Clop Equestria Daily Fan art Fan fiction Fillout: Equestria Friendshipper (and the complex forms) and the complex forms are complex forms and the complex forms from the complex forms from the complex forms from the complex forms from the complex from the compl
Is Witchcraft Legends of Equestria /mlp/ Online communities Ponysona PONY.MOV Them's Fightin' Herds Fan conventions BronyCon Everfree Northwest Ponyville Ciderfest TrotCon UK PonyCon vte 15.ai is a free non-commercial web application and research project that uses artificial intelligence to generate text-to-speech voices of fictional
characters from popular media. Created by a pseudonymous artificial intelligence researcher known as 15, who began developing the technology, the application allowed users to make characters from video games, television shows, and movies speak
custom text with emotional inflections faster than real-time.[a] The platform was notable for its ability to generate convincing voice output using minimal training data—the name "15.ai" referenced the creator's claim that a voice could be cloned with just 15 seconds of audio, in contrast to contemporary deep learning speech models which typically
required tens of hours of audio data. It was an early example of an application of generative artificial intelligence during the initial stages of the AI boom. Launched in March 2020, 15.ai gained widespread attention in early 2021 when content utilizing it went viral on social media platforms like YouTube and Twitter, and quickly became popular
among Internet fandoms, such as the My Little Pony: Friendship Is Magic, Team Fortress 2, and SpongeBob SquarePants fandoms. The service distinguished itself through phonetic transcriptions, and multi-speaker capabilities that allowed a specific product of the service distinguished itself through phonetic transcriptions, and multi-speaker capabilities that allowed a specific product of the service distinguished itself through phonetic transcriptions, and multi-speaker capabilities that allowed a specific product of the service distinguished itself through phonetic transcriptions, and multi-speaker capabilities that allowed a specific product of the service distinguished itself through phonetic transcriptions, and multi-speaker capabilities that allowed a specific product of the service distinguished itself through phonetic transcriptions.
 single model to generate diverse character voices. 15.ai is credited as the first mainstream platform to popularize AI voice actors and industry professionals debated 15.ai's merits for fan creativity versus its potential impact on the profession. While many critics praised the
application's accessibility and emotional control, they also noted technical limitations in areas like prosody options about ethical implications, including concerns about reduction of employment opportunities for voice actors, voice-related fraud, and misuse in explicit content. In January
2022, Voiceverse generated controversy when it was discovered that the company had generated audio using 15.ai without attribution and sold it as a non-fungible token (NFT) without permission.[2] News publications universally characterized this incident as Voiceverse having "stolen" voice lines from 15.ai.[3] The service was ultimately taken
offline in September 2022 due to legal issues surrounding artificial intelligence and copyright. Its shutdown was followed by the emergence of various commercial alternatives in subsequent years, with their founders acknowledging 15.ai's pioneering influence in the field of deep learning speech synthesis. On May 18, 2025, 15 launched 15.dev, a
sequel to the original service that launched after nearly three years of inactivity. For broader coverage of this topic, see Deep learning speech synthesis & History. See also: History of speech synthesis & History o
 significant transformation with the introduction of deep learning approaches. In 2016, DeepMind's publication of the seminal paper WaveNet: A Generative Model for Raw Audio marked a pivotal shift toward neural networks. Previously,
concatenative synthesis—which worked by stitching together pre-recorded segments of human speech, but it often produced robotic-sounding results at the boundaries of sentences.[4] Two years later, this was followed by Google AI's Tacotron 2 in 2018, which demonstrated that neural
networks could produce highly natural speech synthesis but required substantial training data—typically tens of hours of speech, the output quality degraded while still being able to maintain intelligible speech, and with just 24 minutes of training data,
 Tacotron 2 failed to produce intelligible speech.[5] The same year saw the emergence of HiFi-GAN, a generative adversarial network (GAN)-based vocoder that improved the efficiency of waveform generation while producing high-fidelity speech,[6] followed by Glow-TTS, which introduced a flow-based approach that allowed for both fast inference
and voice style transfer capabilities.[7] Chinese tech companies also made significant contributions to the field, with Baidu and ByteDance developing proprietary text-to-speech frameworks that further advanced the technology, though specific technical details of their implementations remained largely undisclosed.[8] [...] The website has multiple
purposes. It serves as a proof of concept of a platform that allows anyone to create content, even if they can't hire someone to voice their projects. It also demonstrates the progress of my research in a far more engaging manner - by being able to use the actual model, you can discover things about it that even I wasn't aware of (such as getting
 characters to make gasping noises or moans by placing commas in between certain phonemes). It also doesn't let me get away with picking and choosing the best results and showing off only the ones that work [...] Being able to interact with the model with no filter allows the user to judge exactly how good the current work is at face value. 15,
 Hacker News[9] Derpy Hooves reciting the FitnessGram PACER test introduction in a neutral emotion[10] Variation #2 Variation #2 Variation #3 Problems playing these files? See media help. 15.ai was conceived in 2016 as a research project in deep learning speech synthesis by a developer known as "15" (at the age of 18[11]) during their freshman
year at the Massachusetts Institute of Technology (MIT) as part of its Undergraduate Research Opportunities Program (UROP).[12] The developer was inspired by DeepMind's WaveNet paper, with developer had demonstrated at MIT their
 ability to replicate WaveNet and Tacotron 2's results using 75% less training data than previously required.[8] The name 15 is a reference to the creator's claim that a voice can be cloned with as little as 15 seconds of data.[13] The developer had originally planned to pursue a doctorate based on their undergraduate research, but opted to work in the
tech industry instead after their startup was accepted into the Y Combinator accelerator in 2019. After their departure in early 2020, the developer returned to their voice synthesis research, implementing it as a web application. According to a post on X from the developer, instead of using conventional voice datasets like LJSpeech that contained
simple, monotone recordings, they sought out more challenging voice samples that could demonstrate the model's ability to handle complex speech patterns and emotional undertones. [tweet 1] The Pony Preservation Project—a fan initiative originating from My Little Pony:
Friendship Is Magic—played a crucial role in the implementation. The project's contributors had manually trimmed, denoised, transcribed, and emotion-tagged every line from the show. This dataset provided ideal training material for 15.ai's deep learning model.[8] An example of a multi-speaker embedding. The neural network maps the predicted
 timestamps to a masked embedding sequence that encodes speaker information. 15.ai was released in March 2020 with a limited selection of characters, including those from My Little Pony: Friendship Is Magic and Team Fortress 2.[14] The system was designed to function efficiently with limited training data—requiring only minutes of clean audio
 per character, in contrast to the 40+ hours typically needed by traditional deep learning models.[15] To overcome data constraints, the developer employed specific data augmentation patterns, and pronunciation distortions during training.[15]
 Upon its launch, 15.ai was offered as a free[16] and non-commercial[17] service that did not require user registration or user accounts to operate,[18] and required the user to accept the terms of use before proceeding.
15.ai by including the website URL in any posts, videos, or projects using the generated audio;[20] and they were prohibited from mixing 15.ai outputs with other text-to-speech outputs in the following months.[23] A
 significant technical advancement came in late 2020 with the implementation of a multi-speaker embedding in the deep neural network, enabling simultaneous training of multiple voices rather than requiring individual models for each character voice.[8] This not only allowed rapid expansion from eight to over fifty character voices,[11] but also let
the model recognize common emotional patterns across characters, even when certain emotions were missing from some characters' training data.[24] By May 2020, the site had served over 4.2 million audio files to users.[25] In early 2021, the application gained popularity after skits, memes, and fan content created using 15.ai went viral on Twitter
TikTok, Reddit, Twitch, Facebook, and YouTube.[26] At its peak, the platform incurred operations; despite receiving offers from companies to acquire 15.ai and its underlying technology, the website remained independent and was funded
out of the personal previous startup earnings of the developer[8]—then aged 23 at the time. See also: Non-fungible token § Plagiarism and fraud A satirical meme representing the "right-click, save as" criticism of NFTs. Critics of Voiceverse pointed out the irony of selling ownership rights to AI voices when they themselves had copied 15.ai's
technology without attribution. On January 14, 2022, a controversy ensued after it was discovered that Voiceverse NFT had taken credit for voice lines generated from 15.ai without permission[3] and sold them as NFTs (non-fungible tokens).[2] This came shortly after 15.ai's developer had explicitly stated in December 2021 that they had no interest
in incorporating NFTs into their work.[27] Log files showed that Voiceverse had generated audio of characters from My Little Pony: Friendship Is Magic using 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform[28]—in violation of 15.ai, pitched them up to make them sound unrecognizable from the original voices to market their own platform [28]—in violation of 15.ai, pitched them up to make the original voices the original voice
commercial use and required proper attribution. [29] Voiceverse initially claimed their platform would allow NFT owners to possess commercial rights to AI-generated voices for content creation, in-game chats, and video calls.
the voice without properly crediting 15.ai[31] and explained in their Discord server that their marketing team had been in such a rush to create a partnership demo that they used 15.ai without waiting for their own voice technology to be ready.[32] The controversial tweet was deleted thereafter.[33] In response to their apology, 15 tweeted "Go fuck
yourself, "[34] which went viral, amassing hundreds of thousands of retweets and likes on Twitter in support of the developer. [8] 15 later expressed deeper frustration, writing: "the entire field of vocal synthesis is now being misrepresented by charlatans who are only in it for the money." [21] Avatar of Troy Baker Troy Baker Troy Baker Troy Baker WA I'm
 partnering with @VoiceverseNFT to explore ways where together we might bring new tools to new creators to make new things, and allow everyone a chance to own & invest in the IP's they create. We all have a story to tell. You can hate. Or you can create. What'll it be? January 14, 2022[35] Following continued backlash and the plagiarism
revelation, voice actor Troy Baker (who had partnered with Voiceverse) faced criticism for supporting an NFT project[36] and his confrontational announcement tone.[37] Baker had described Voiceverse's service as allowing people to "create customized audiobooks, YouTube videos, e-learning lectures, or even podcasts with your favorite voice all
 without the hassle of additional legal work,"[19] which critics noted raised concerns about potentially replacing professional voice actors with AI.[38] Baker subsequently acknowledged that his original announcement tweet ending with "You can hate. Or you can create. What'll it be?" may have been "antagonistic,"[39] and on January 31, announced
he would discontinue his partnership with Voiceverse.[40] The event raised concerns about NFT projects, which critics observed were frequently associated with intellectual property theft and questionable business practices.[41] The incident was later documented in the AI Incident Database (AIID), cataloging it as an example of "an AI-synthetic
audio sold as an NFT on Voiceverse's platform [that] was acknowledged by the company for having been created by 15.ai, a free web app specializing in text-to-speech and AI-voice generation, and reused without proper attribution."[42] The controversy was also featured in writer and crypto skeptic Molly White's Web3 Is Going Just Great project,
 which documented how Baker's partnership announcement and its antagonistic tone exacerbated negative reactions to the NFT initiative. [43] White noted the vague nature of Voiceverse's offering, described only as "provid[ing] you an ownership to a unique voice in the Metaverse, "[44] and noted how the revelation of stolen work from 15.ai further
damaged Voiceverse's credibility.[43] Russian educational platform Skillbox listed the incident as an example of fraud in NFTs.[45] Voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber Youg Yea criticized voice NFTs for its potential impact on the voice actor and YouTuber YouTuber
'Whoopsies!' on. [They] plagiarized somebody else's work and used that as a means to falsely market the quality voice AI to promote [Voiceverse] for [their] own benefit."[video 1] In a 2024 class action lawsuit filed against LOVO, Inc., court documents alleged that the founders of LOVO
 also created Voiceverse, with plaintiffs claiming that Voiceverse had "already been found to have stolen technology from [15.ai]".[46] In September 2022, 15.ai was taken offline[47] due to legal issues surrounding artificial intelligence and copyright.
 generated voice line variations from 15.ai showing their waveforms and respective alignment confidence scores The platform was non-commercial,[17] had no advertisements, generated by inputting text and selecting a character voice, with optional
 parameters for emotional contextualizers and phonetic transcriptions. Each request produced three audio variations with distinct emotional deliveries sorted by confidence score.[51] Characters available included multiple characters from Team Fortress 2 and My Little Pony: Friendship Is Magic, including the Mane Six and Derpy Hooves; GLaDOS,
 Wheatley, and the Sentry Turret from the Portal series; SpongeBob SquarePants; Kyu Sugardust from HuniePop, Rise Kujikawa from Persona 4; Daria Morgendorffer and Jane Lane from Undertale; Madeline and multiple characters from
Celeste; the Tenth Doctor Who; the Narrator from The Stanley Parable; and HAL 9000 from 2001: A Space Odyssey.[52] Out of the over fifty[11] voices available, thirty were of characters from My Little Pony: Friendship Is Magic.[23] Certain "silent" characters like Chell and Gordon Freeman were able to be selected as a joke, and would emit silent
 audio files when any text was submitted.[53] Characters from Undertale and Celeste did not produce spoken words but instead generated by the DeepMoji model. These emoji distributions were displayed on 15.ai as part of its technical metrics
 and graphs.[55] 15.ai generated audio at 44.1 kHz sampling rate—higher than the 16 kHz standard used by most deep learning text-to-speech systems of that period. This higher fidelity created more detailed audio spectrograms and greater audio resolution, though it also made any synthesis imperfections more noticeable. Users reported using
Audacity to downsample any generated audio in order to mask apparent robotic artifacts, though this came at the cost of lower audio quality.[15] The system processed speech faster-than-real-time using customized deep neural networks combined with specialized audio synthesis algorithms.[56] While the underlying technology could produce 10
 seconds of audio in less than 10 seconds of processing time (hence, faster-than-real-time), the actual user experience often involved longer waits as the servers managed thousands of simultaneous requests, sometimes taking more than a minute to deliver results. [57] The deep learning model's nondeterministic properties produced variations in
speech output, creating different intonations with each generation, similar to how voice actors produce different takes. [58] 15.ai introduced the concept of emotional contextualizer, which allowed users to specify the emotional tone of generated speech through guiding phrases. [59][8] The emotional contextualizer functionality utilized DeepMoji, a specify the emotional contextualizer functionality utilized DeepMoji.
 sentiment analysis neural network developed at the MIT Media Lab. Introduced in 2017, DeepMoji processed emoji embeddings from 1.2 billion Twitter posts (from 2013 to 2017) to analyze emotional context following the bar would be used as
the emotional contextualizer. [61] For example, if the input was Today is a great day! I'm very sad., the selected character would speak the sentence "I'm very sad." [62] Certain characters, such as Twilight Sparkle from My Little Pony. Friendship Is Magic
offered preset emotional modes, who had specific options to output text in different emotional states such as "happy".[63] An example of a conversion of the text "daisy bell" into speech, starting from English orthography. English words are parsed as a string of ARPABET phonemes, then is passed through a pitch predictor and a mel-spectrogram
 generator to generate audio. The application used pronunciation data from Oxford Dictionary, and CMU Pronouncing Dictionary, the last of which is based on ARPABET, a set of English phonetic transcriptions originally developed by the Advanced Research Projects Agency in the 1970s. For modern and Internet-specific terminology
 the system incorporated pronunciation data from user-generated content websites, including Reddit, Urban Dictionary, 4chan, and Google.[20] Inputting ARPABET transcriptions was also supported, allowing users to correct mispronunciations or specify the desired pronunciation between heteronyms—words that have the same spelling but have
different pronunciations. Users could invoke ARPABET transcriptions by enclosing the phoneme string in curly braces within the input box (for example, {AA1 R P AH0 B EH2 T} to specify the pronunciation of the word "ARPABET" (/'a:rpə,bɛt/ AR-pə-beht).[24] The interface displayed parsed words with color-coding to indicate pronunciation certainty
green for words found in the existing pronunciation lookup table, blue for manually entered ARPABET pronunciations, and red for words where the pronunciation had to be algorithmically predicted. [20] Later versions of 15.ai introduced multi-speaker capabilities. Rather than training separate models for each voice, 15.ai used a unified model that
 expressions and speaking styles, even when individual characters lacked examples of certain emotional contexts in their training data.[24] The platform limited text input to 200 characters per generation, though users could create multiple clips for longer speech sequences.[64] The interface included technical metrics and graphs, which served to
 highlight the research aspect of the website.[11] The name of the underlying algorithm used by 15.ai was dubbed DeepThroat.[65] As of version v23 of 15.ai, the interface displayed comprehensive model analysis information, including word parsing results and emotional analysis data. The flow and generative adversarial network (GAN) hybrid vocodes
and denoiser, introduced in an earlier version, was streamlined to remove manual parameter inputs.[11] Critics described 15.ai as easy to use and generally able to convincingly replicate character voices, with occasional mixed results.[66] Natalie Clayton of PC Gamer wrote that SpongeBob SquarePants' voice was replicated well, but noted
challenges in mimicking the Narrator from the The Stanley Parable: "the algorithm simply can't capture Kevan Brighting's whimsically droll intonation." [67] Similarly, Russian gaming website Rampaga reflected that GLaDOS performed exceptionally well since "her voice was originally created to simulate human speech by artificial intelligence," while
the Narrator from The Stanley Parable was less convincing due to insufficient training data.[68] Zack Zwiezen of Kotaku reported that "[his] girlfriend was convinced it was a new voice line from GLaDOS' voice actor".[69] Calvin Rugona of gaming news publication Gamezo commented that the tool's simplicity contributed significantly to its
 widespread adoption, as it allowed anyone online to easily create and save voice clips.[54] Taiwanese newspaper United Daily News also highlighted 15.ai's ability to recreate GLaDOS's mechanical voice, alongside its diverse range of character voice options.[70] Yahoo! News Taiwan reported that "GLaDOS in Portal can pronounce lines nearly
perfectly", but also criticized that "there are still a little weird in some words."[71] Chris Button of AI newsletter Byteside called the ability to clone a voice with only 15 seconds of data "freaky," but also found the tech behind it impressive.[72] Robin Lamorlette of French online
 magazine Clubic described the technology as "devilishly fun" and noted how Twitter and YouTube were filled with creative content from users experimenting with the tool.[73] The platform's voice generation capabilities were regularly featured on Equestria Daily, a fandom news site dedicated to the show My Little Pony: Friendship Is Magic and its
 other generations, with documented updates, fan creations, and additions of new character voices. [23] In a post introducing new character additions to 15.ai, Equestria Daily's founder Shaun Scotellaro—also known by his online moniker "Sethisto"—wrote that "some of [the voices] aren't great due to the lack of samples to draw from, but many are
really impressive still anyway."[23] Chinese My Little Pony fan site EquestriaCN also documented 15.ai's development, highlighting its various updates, though they criticized some of the bugs and the long queue wait times of the application.[74] Multiple other critics also found the word count limit, prosody options, and English-only nature of the
application as not entirely satisfactory.[75] Peter Paltridge of anime and superhero news outlet Anime Superhero news opined that "In some ways, SAM is still more advanced than this. It was possible
to affect SAM's inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will. With 15.ai, you're at the mercy of whatever random inflections by using special characters, as well as change his pitch at will be a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at will be a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at will be a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at which is a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at which is a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at which is a support of the mercy of whatever random inflections by using special characters, as well as change his pitch at which is a support of the mercy of whatever random inflections by using special characters.
news website Qore.com wrote that "the most experienced of users can change parameters like the stress or the tone."[78] Takayuki Furushima of Den Fami Nico Gamer highlighted the "smooth pronunciations", and Yuki Kurosawa of AUTOMATON noted its "rich emotional expression" as a major feature; both Japanese authors noted the lack of
 Japanese-language support.[79][80] Renan do Prado of Brazilian gaming news outlet Arkade and José Villalobos of Spanish respectively, the generation performed best in English.[81] Chinese gaming news outlet GamerSky called the app
 "interesting", but also criticized the word count limit of the text and the lack of intonations.[82] Frank Park of South Korean video game outlet Zuntata wrote that "the surprising thing about 15.ai is that [for some characters], there's only about 30 seconds of data, but it achieves pronunciation accuracy close to 100%".[83] Machine learning professor
 Yongqiang Li remarked in his blog that the application was still free despite having 5,000 people generating voices concurrently at the time of writing.[84] Marco Cocomello of South African gaming and pop culture website GLITCHED remarked that despite the 200-character limitation, the results "blew [him] away" when testing the app with
GLaDOS's voice.[85] Alvaro Ibáñez of Spanish technology publication Microsiervos wrote that he found the rhythm of the AI-generated voices noteworthy, observing that the system appeared to adapt its delivery based on the content's intended meaning.[86] Technical publications and outlets focusing on artificial intelligence provided more in-depth
analysis of 15.ai's capabilities and limitations compared to other text-to-speech technologies of the time.[87] Rionaldi Chandraseta of AI newsletter Towards Data Science observed that voice models trained on larger datasets created more convincing output with better phrasing and natural pauses, particularly for extended text.[59] Bai Feng of
Chinese tech and AI media outlet XinZhiYuan on QQ News highlighted the technical achievement of 15.ai's high-quality output (44.1 kHz sampling rate) deep learning text-to-speech implementations which used 16 kHz sampling rates. The outlet
 also acknowledged that while some pronunciation errors occurred due to the limited training data, this was understandable given that traditional deep learning models typically required 40 or more hours of training data. [88] Similarly, Parth Mahendra of AI newsletter AI Daily observed that while the system "does a good job at accurately replicating
most basic words," it struggled with more complex terms, noting that characters would "absolutely butcher the pronunciation" of certain words.[25] Ji Yunyo of Chinese tech news website NetEase News called the technology behind 15.ai "remarkably efficient," requiring only minimal data to accurately clone numerous voices while maintaining
emotional nuance and natural intonation. However, he also pointed out limitations, noting that the emotional expression was relatively "neutral" and that "extreme" emotions couldn't be properly synthesized, making it less suitable for not safe for work applications. [89] Ji also mentioned that while many deepfake videos required creators to extract
and edit material from hours of original content for very short results, 15.ai could achieve similar or better effects with only a few dozen minute to complete. [90] Ellen McLain (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lowrie (voice of GLaDOS in Portal) and John Patrick Lo
the Sniper in Team Fortress 2) were interviewed on The VOC Podcast in 2021 about their perspectives on 15.ai and AI voice synthesis technology. Some voice actors whose characters appeared on 15.ai have publicly shared their thoughts about the platform. In a 2021 interview on video game voice acting podcast The VOC, John Patrick Lowrie—who
voices the Sniper in Team Fortress 2—explained that he had discovered 15.ai when a prospective intern showed him a skit she had created using AI-generated voices of the Sniper and the Spy from Team Fortress 2. Lowrie commented: "The technology still has a long way to go before you really believe that these are just human beings, but I was
impressed by how much [15.ai] could do. You certainly don't get the delivery that you get from an actual person who's analyzed the scene, [...] but I do think that as a fan source—for people wanting to put together mods and stuff like that—that it could be fun for fans to use the voice of characters they like." He drew an analogy to synthesized music
 adding: "If you want the sound of a choir, and you want the sound of an orchestra, and you have the money, you hire a choir and an orchestra. "[video 2] In a 2021 live broadcast on his Twitch channel, Nathan Vetterlein—the
voice actor of the Scout from Team Fortress 2—listened to an AI recreation of his character's voice. He described the impression as "interesting" and noted that "there's some stuff in there."[video 3] See also: Deepfake § Concerns and countermeasures Other voice actors had mixed reactions to 15.ai's capabilities. While some industry professionals
 acknowledged the technical innovation, others raised concerns about the technology's implications for their profession. [91] When voice actor Troy Baker announced his partnership with Voiceverse NFT, which had misappropriated 15.ai's technology, it sparked widespread controversy within the voice acting industry. [92] Critics raised concerns about
automated voice acting's potential reduction of employment opportunities for voice actors, [93] risk of voice actors, [93] risk o
a project and paying them."[19] In her coverage of the Voiceverse controversy, Edie WK of Checkpoint Gaming raised the concern that "this kind of technology has the potential to push voice actors out of work if it becomes easier and cheaper to use AI voices instead of working with the actor directly."[94] While 15.ai limited its scope to fictional
characters and did not reproduce voices of real people or celebrities, [20] computer scientist Andrew Ng noted that similar technology could be used to do so, including for nefarious purposes. In his 2020 assessment of 15.ai, he wrote: "Voice cloning could be enormously productive. In Hollywood, it could revolutionize the use of virtual actors. In
cartoons and audiobooks, it could enable voice actors to participate in many more productions. In online education, kids might pay more attention to lessons delivered by the voices of favorite personalities. And how many YouTube how-to video producers would love to have a synthetic Morgan Freeman narrate their scripts? While discussing potential
risks, he added: "...but synthesizing a human actor's voice without consent is arguably unethical and possibly illegal. And this technology will be catnip for deepfakers, who could scrape recordings from social networks to impersonate private individuals." [95] A January 2021 CNN broadcast showing a fan edit that used 15.ai to replace Donald Trump's
 Home Alone 2 cameo with the Heavy Weapons Guy from Team Fortress 2 15.ai was an early pioneer of audio deepfakes, leading to the emergence of AI speech synthesis-based memes during the initial stages of the AI boom in 2020. 15.ai is credited as the first mainstream platform to popularize AI voice cloning in Internet memes and content
creation,[1] particularly through its ability to generate convincing character voices in real-time without requiring extensive technical expertise.[96] The platform's impact was especially notable in fan communities, including the My Little Pony: Friendship Is Magic, Portal, Team Fortress 2, and SpongeBob SquarePants fandoms, where it enabled the
 creation of viral content that garnered millions of views across social media platforms like Twitter and YouTube.[97] Team Fortress 2 content creators also used the platform to produce both short-form memes and complex narrative animations using Source Filmmaker. Fan creations included skits and new fan animations[20] (such as the popular
Team Fortress 2 Source Filmmaker video Spy's Confession[11]), crossover content—such as Game Informer writer Liana Ruppert's demonstration combining Portal and Mass Effect dialogue in her coverage of the platform[98]—recreations of viral videos (including the infamous Big Bill Hell's Cars car dealership parody[99]), adaptations of fanfiction
using AI-generated character voices (such as The Tax Breaks, a fully voiced 17-minute fan-made episode of Friendship Is Magic),[100] music videos and new musical compositions—such as the Team Fortress 2 remix Pootis Hardbass[11]—and content where characters recited sea shanties.[101] Some fan creations gained mainstream attention, such as
a viral edit replacing Donald Trump's cameo in Home Alone 2: Lost in New York with the Heavy Weapons Guy's AI-generated voice, which was featured on a daytime CNN segment in January 2021.[102] Some users integrated 15.ai's voice synthesis with VoiceAttack, a voice command software, to create personal assistants.[103] The Tax Breaks is a
17-minute fan-made episode of Friendship Is Magic produced using character voices from 15.ai. Its influence has been noted in the years after it became defunct, [104] with several commercial alternatives emerging to fill the void, such as ElevenLabs[b] and Speechify. [106] Contemporary generative voice AI companies have acknowledged 15.ai's
 pioneering role. Y Combinator startup PlayHT called the debut of 15.ai "a breakthrough in the field of text-to-speech (TTS) and speech synthesis".[107] Cliff Weitzman, the founder and CEO of Speechify, credited 15.ai for "making AI voice cloning popular for content creation by being the first [...] to feature popular existing characters from fandoms"
 [108] Mati Staniszewski, co-founder and CEO of ElevenLabs, wrote that 15.ai was transformative in the field of AI text-to-speech.[109] At brony conventions, 15.ai has been discussed in presentations on the intersection of the My Little Pony fandom and artificial intelligence.[110] Prior to its shutdown, 15.ai established several technical precedents
that influenced subsequent developments in AI voice synthesis. Its integration of DeepMoji for emotional analysis demonstrated the viability of incorporating sentiment-aware speech generation, [111] while its support for ARPABET phonetic transcriptions set a standard for precise pronunciation control in public-facing voice synthesis tools.[8] The
platform's unified multi-speaker model, which enabled simultaneous training of diverse character voices, proved particularly influential. This approach allowed the system to recognize emotional patterns across different voices even when certain emotions were absent from individual character training sets; for example, if one character had examples examples across different voices.
 of joyful speech but no angry examples, while another had angry but no joyful samples, the system could learn to generate both emotions for both characters by understanding the common patterns of how emotions for both characters by understanding the common patterns of how emotions affect speech [24] 15.ai also made a key contribution in reducing training data requirements for speech synthesis. Earlier systems like
Google AI's Tacotron and Microsoft Research's FastSpeech with less than 24 minutes of training data.[5][112] In contrast, 15.ai demonstrated the ability to generate speech with substantially less training data.—specifically, the name "15.ai" refers to
 the creator's claim that a voice could be cloned with just 15 seconds of data.[113] This approach to data efficiency influenced subsequent voice synthesis systems. The original claim that only 15 seconds of data is required to clone a
human's voice was corroborated by OpenAI in 2024.[114] AI boom Character.ai Deepfake Ethics of artificial intelligence WaveNet My Little Pony: Friendship Is Magic fandom Synthetic media ^ The term "faster than real-time" in speech—for
example, generating 10 seconds of speech in less than 10 seconds would be considered faster than real-time. ^ which uses "11.ai" as a legal byname for its web domain[105] ^ a b Cocomello 2021: "However, back then if you wanted to create your own dialogue, it required layers of sound enhancements and tweaks. Thankfully, the world has evolved
 would be like if your favorite game or anime characters could say exactly what you want to hear? Whether it's names, parodies, or classic quotes, this is a dream for many. However, as we enter 2021, this dream is no longer just a fantasy, because there is a website that uses AI-generated technology,). Anirudh VK 2023: "While AI voice memes have
 been around in some form since '15.ai' launched in 2020, [...]" Wright 2023: "AI voice tools used to create "audio deepfakes" have existed for years in one form or another, with 15.ai being a notable example." Weitzman 2023: "It gained popularity because it was the first AI voice platform that featured an assortment of fictional characters from a
 variety of media sources" Temitope 2024: "During this period, 15.ai earned credit for single-handedly popularizing AI voice cloning—often described as 'audio deepfakes'—in memes, viral content, and fan-driven media." Abisola 2025: "Many credit 15.ai as the first mainstream text-to-speech platform that truly made 'audio deepfakes' go viral," ^ a b
 Lam 2022: "audio sold as an NFT on Voiceverse har nu indrømmet, efter en masse beskyldninger, at de har stjålet, og solgt, AI-baseret stemmeskuespil som NFT'er baseret på en stemme opfundet og designet af en tjeneste ved navn
 15.ai." (transl. "Voiceverse has now admitted, after a lot of accusations, that they have stolen, and sold, AI-based voice acting as NFTs based on a voice content stolen from fifteenAI" Phillips 2022: "Indeed, log files apparently showed
 Voiceverse NFT had used 15.ai for an AI-powered voice to be sold as an NFT." Kuchkanov 2022: "Ero работу взяли и продавали как уникальный токен." (transl. "[15.ai's] work was taken and sold as a unique token.") ^ a b Lawrence 2022: "It was revealed that [Voiceverse] had stolen voice work it'd been using." Wright 2022: "Voiceverse NFT [...]
 admitted to using content without permission from 15.ai "Carcasole 2022: "Voiceverse NFT was caught having taken voice lines from [...] 15.ai Innes 2022: "Voiceverse has admitted that they stole voice lines Beckwith 2022: "NFT firm Voiceverse admits it stole
 work" Muropaketti 2022: "että yhtiö käytti luvatta kilpailijan ääninäyttelyä" (transl. "[Voiceverse] used [15.ai's] voice acting without permission") Anikó 2022: "Voiceverse har nu indrømmet [...] at de har stjålet" (transl. "Voiceverse has now admitted [...] that they stole") Aktaş 2022
 "Troy Baker-backed NFT firm admitted using voice lines from [15.ai] without permission" White 2022: "Koмпанию уличили в воровстве в тот же день, когда актёр объявил о сотрудничестве" (transl. the company was caught stealing on the same day the actor
announced his partnership) Piletsky 2022: "Bokope в тот же день Voiceverse NFT ynuunu в воровстве." (transl. "Shortly after that same day, Voiceverse NFT was caught stealing.") Lopez 2022: "Voiceverse NFT ynuunu в воровстве." (transl. "Shortly after that same day, Voiceverse NFT ynuunu в воровстве." (transl. "Shortly after that same day, Voiceverse NFT was caught stealing.")
comercializar una muestra [...] sin el permiso de su autor" (transl. "the aforementioned NFT company would be trying to take advantage of it by marketing a sample [...] without the permiso de su autor" (transl. "the aforementioned NFT company would be trying to take advantage of it by marketing a sample [...] without the permission of its author.") A Barakat, Turk & Demiroglu 2024. A b Google 2018 Kong, Kim & Bae 2020. A b c d e f g h i j k l Temitope 2024.
Hacker News 2022 ^ "Examples". May 15, 2025. A b c defg Abisola 2025. ^ Chandraseta 2021; Li 2021; Temitope 2024; Abisola 2025. ^ Chandraseta 2021; Li 2021; Temitope 2024; Abisola 2025. ^ Chandraseta 2021; Li 2021; Temitope 2024; Abisola 2025. ^ Chandraseta 2020; Mahendra 2020. ^ Clayton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "Examples". A b c defg Abisola 2025. ^ Chandraseta 2020; Mahendra 2020. ^ Clayton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-learning tool," Oxton 2021: "But thanks to a free online machine-
 онлайн-инструменту, основанному на машинном обучении" (transl. "A free online tool powered by machine learning") Paltridge 2021: "It's 15.ai, a free website anyone can use." Li 2021: "该网站的访问量为在线任务差不多5000以上,而且目前完全免费" (transl. "The number of visits to the website is more than 5,000 online, but it is currently completely
 Tree.") Lam 2022: "15.a1, a free web app specializing in text-to-speech and Al-voice generation" 10n 2022: "the popular free-to-use Al that can accurately clone voices," ` a b williams 2022: "15.a1, a free web app specializing in text-to-speech service." wright 2022: "15.a1, a non-commercial text-to-speech service, 15.a1, a free-to-use Al that can accurately clone voices," ` a b williams 2022: "15.a1, a free-to-use fext-to-speech service, 15.a1, a free-to-use Al that can accurately clone voices," ` a b williams 2022: "15.a1, a free-to-use fext-to-speech service, 15.a1, a free-to-use fext-to-use f
text-to-speech service." Innes 2022: "When using the 15.ai project, a warning comes up that states the project is not for commercial use" ^ a b Villalobos 2021: "Simplemente tienes que entrar, seleccionar a GlaDOS entre la lista de personajes disponibles," (transl. "You just have to enter, select GlaDOS from the list of available characters,") do Prado
2021: "Para usar o programa é bem simples, acesse-o CLICANDO AQUI, e nas barras de opções é só escolher o game/desenho/seriado de onde quer a voz, escolher o personagem e digitar." (transl. Using the program is very simple. Access it by CLICKING HERE, and in the options bars, just choose the game/cartoon/series you want the voice from,
choose the character and type.) ^ a b c Innes 2022. ^ a b c d e Kurosawa 2021. ^ a b Beckwith 2022. ^ "About". 15.ai (Official website). March 2, 2020. Archived from the original on March 3, 2020. Retrieved December 23, 2024. ^ a b C d Scotellaro 2020b. ^ a b c d Scotellaro 2020b. ^ a b c d Scotellaro 2020b. ^ a b C d Scotellaro 2020c. Archived from the original on March 3, 2020. Retrieved December 23, 2024. ^ a b C d Scotellaro 2020b. ^ a b C d Scotellaro 2020b. ^ a b C d Scotellaro 2020b. ^ a b C d Scotellaro 2020c. Archived from the original on March 3, 2020. Retrieved December 23, 2024. ^ a b C d Scotellaro 2020b. ^ a b C d Scotellaro 2020c. ^ a b C d Scotellaro 2020b. ^ a b C d Scotellaro
Rugona 2021; Abisola 2025. ^ Lopez 2022; Innes 2022; Innes 2022; Innes 2022; Myrén 2022. ^ Phillips 2022. ^ Phillips 2022. ^ Philli
демо, что не дождалась создания подходящего голоса и взяла ero c 15.ai." (transl. "As explained in the Discord, the marketing team was in such a rush to make a partner demo that they didn't wait for a suitable voice to be created and took it from 15.ai.") Piletsky 2022; Skorich 2022. A Wright 2022; Groth-Anderson 2022; Myrén 2022. A Innes
2022; Enriquez 2022. ^ Lopez 2022. ^ White 2022; W-K 2022. ^ White 2022; Carcasole 2022. ^ White 2022; Carcasole 2022. ^ White 2022; Carcasole 2022. ^ White 2022. ^ Carcasole 2022. ^ Carcasol
cv-03770, 38 (S.D.N.Y. 2024) ("Separately, VoiceVerse has already been found to have stolen technology from another company. See Ule Lopez, WCCF Tech, "Voiceverse NFT Service Reportedly Uses Stolen Technology from 15ai," (Jan. 16, 2022), ). ^ Staniszewski 2024; Gigonway 2023. ^ "FAQ". 15.dev. May 18, 2025. Retrieved May 18, 2025. ^
@fifteenai (May 18, 2025). "We are so back. Only MLP characters for now. More characters, features, and improvements will be added soon. Check Twitter and/or the Discord server (linked on the website) for updates! (Expect possible downtime as I calibrate server capacity and GPU allocations depending on how busy the website gets.)" (Tweet).
Retrieved May 18, 2025 - via Twitter. ^ Scotellaro 2021; Kurosawa 2021; Rugona 202
2025. ^ Feng 2020; Chandraseta 2021. ^ Chandraseta 2021; Ji 2021; Lamorlette 2021. ^ a b Menor 2024. ^ a b Chandraseta 2021. ^ Kurosawa 2021; Button 2021. ^ Chandraseta 2021. ^ Chandrase
words, 'text_1|text_2' will produce a voice line of text_1 with the emotion of text_2." ^ Chandraseta 2021: "because it could force the bot into generating previously unknown data, such as saying 'Today is a great day' with a sad or angry emotion" ^ Mahendra 2020: "For example, Twilight Sparkle from My Little Pony has the option of outputting the
written text in a happy mode." ^ Cocomello 2021; Ruppert 2021. ^ Clayton 2021. ^ Clayton 2021; Ruppert 2021. ^ Clayton 2021; 
создавался с целью симуляции человеческой речи искусственным интеллектом. Увы, но всех диалогов Pacckaзчика из The Stanley Parable недостаточно, чтобы AI научился подражать причудливой интонации Keвaна Брайтинга." (transl. "Some characters sound better than others. GLaDOS is the best at this task, as her voice was originally
created to simulate human speech by artificial intelligence. Unfortunately, all the dialogue from The Stanley Parable's Narrator isn't enough for the AI to learn to imitate Kevan Brighting's quirky intonation.") ^ Zwiezen 2021. ^ 遊戲 2021: "目前「15.ai」的網頁上,提供了不少的音源,[...]除了《傳送門》之外,15.ai 網站目前也支援了許多來自遊戲、電影或動畫中的
人物語音, " (transl. "Currently, the "15.ai" website provides a lot of audio sources. [...] In addition to "Portal", the 15.ai website currently also supports voices for many characters from games, movies or animations. MrSun 2021: "的 GLaDOS 也能完美的唸出任何台詞。當然網站也補充目前還有很多不完美的地方,像是字數限制、語氣控制在某些話上還是略有怪異,但
只要肯花時間, 也能像是其他網友一樣, 通過剪輯來完成有趣的創作, " (transl. "Even GLaDOS in "Portal" can perfectly recite any limes. Of course, the website also added that there are still many imperfections, such as word limit and tone control, which are still a bit weird in some words, but as long as you are willing to spend time, you can also complete
interesting creations through editing like other netizens.") ^ Button 2021: "On peut donc retrouver sur ces réseaux de nombreux exemples de ce que peut donner le mélange entre un esprit créatif et une technologie aussi efficace que diablement amusante." (transl. "These social networks are therefore full of examples of what can
be achieved by combining a creative mind with technology that is as effective as it is devilishly fun.") ^ www.equestriacn.com 2021. ^ Paltridge 2021. ^ Morton 2021. ^ Morton 2021. ^ Paltridge 2021. ^ Morton 2021. ^ Paltridge 2021. ^ Morton 2021. ^ Morton 2021. ^ Paltridge 2021. ^ Morton 2021.
experienced of users can change some parameters like the stress or tone.") ^ Furushima 2021: 日本語入力には対応していないが、ローマ字入力でもなんとなくそれっぽい発音になる。; 15.aiはテキスト読み上げサービスだが、特筆すべきはそのなめらかな発音と、ゲームに登場するキャラクター音声を再現している点だ。 (transl. It does not support Japanese input, but even if
you input using romaji, it will somehow give you a similar pronunciation.; 15.ai is a text-to-speech service, but what makes it particularly noteworthy is its smooth pronunciation and the fact that it reproduces the voices of characters that appear in games.) ^ Kurosawa 2021: "もうひとつ15.aiの大きな特徴として挙げられるのが、豊かな感情表現だ" (transl.
 "Another major feature of 15.ai is its rich emotional expression.") Aurosawa 2021: "英語版ボイスのみなので注意" (transl. "Please note that this is an English voice only version.") ^ do Prado 2021: "Obviamente o programa funciona no idioma inglês, mas dá pra gerar umas frases bem emboladas e engraças em português, estilo aqueles memes usando
vozes em outros idiomas falando em português." (transl. "Obviously, the program works in English, but you can generate some really confusing and funny sentences in Portuguese, like those memes using voices in other languages speaking Portuguese.") Villalobos 2021: "En este sentido, en las últimas horas se ha hecho popular un sitio web que
emula la voz de GlaDOS para que diga todas las palabras que quieras, siempre y cuando estén en inglés, aunque puedes escribir algo en español e intentará pronunciarlo, pero no lo hará correctamente." (transl. "In this sense, in recent hours a website has become popular that emulates the voice of GlaDOS so that it says all the words you want, as
long as they are in English, although you can write something in Spanish and it will try to pronounce it, but it will not do it correctly.") 个 GamerSky 2021: "虽然AI的声音缺少了些抑扬顿挫,不过效果也还算有趣。" (transl. "Although the AI's voice lacks some intonation, the effect is still interesting.") GamerSky 2021: "目前15.ai提供的角色选项较少,由于文本的字数
限制, 生成的语音也相对较短" (transl. "Currently, 15.ai provides relatively few character options, and due to the word limit of the text, the generated voice is relatively short.") ^ Park 2021: "15.ai ア 30 ア 100% ア " (transl. "[...] what's amazing about 15.ai is that the data is close to 30 seconds long, but it achieves pronunciation accuracy close to
100%.") ^ Li 2021: "该网站的访问量为在线任务差不多5000以上,而且目前完全免费," (transl.: "The number of requests to the website is more than 5,000 tasks, and it is still currently completely free.") ^ Cocomello 2021. ^ Ibáñez 2022: "Personalmente encontré interesantes las pausas y el ritmo y que ciertamente se nota que según el contenido del texto
se «interpreta» el resultado según lo que se intenta transmitir." (transl. "Personally, I found the pauses and rhythm interesting, and that it is certainly noticeable that depending on the content of the text, the result is 'interpreted' according to what is being trying to convey.") ^ Feng 2020; Mahendra 2020; Ji 2021. ^ Feng 2020: "该工具生成的音频文件的
采样率为 44100 Hz, 而大多数基于深度学习的文本转语音实现, 所使用的采样率为16,000 Hz。所以用它产生的音频, 声谱会更详细(更高质量的音频), 同时缺陷也更明显。"(transl. "The audio files generated by this tool have a sampling rate of 44100 Hz, while most deep learning-based text-to-speech implementations use a sampling rate of 16,000 Hz. Therefore, the
audio generated by it will have a more detailed sound spectrum (higher quality audio), but the defects will be more obvious.") Feng 2020: "当然在这么小的语料上训练的模型也是有缺陷的,有些单词可能发音不准确,其实这也很好理解,即使是人,在遇到生词的时候也不一定能准确发音,而传统的深度模型通常有 40 个小时或者更多的语料,所以错误率会低一些。" (transl. "Of
course, the model trained on such a small corpus is also flawed, and some words may not be pronounced correctly. In fact, this is easy to understand. Even humans may not be able to pronounce new words accurately when they encounter them. Traditional deep models usually have 40 hours or more of corpus, so the error rate will be lower.") ^ Ji
2021: "但是由于情绪表现只能联系上下文进行自动识别,导致这些语音在情感表达上比较"中庸",一些"极端"的情绪无法通过语音合成正常表达,[...]距离其被正式用于某些NSFW的同人作品,还有很长的路要走。" (transl. "the emotional expression can only be automatically recognized in the context, which makes these voices relatively "neutral" in emotional expression. Some
 "extreme" emotions cannot be expressed normally through voice synthesis. [...] it still has a long way to go before it can be officially used in some NSFW fan works.") ^ Ji 2021: "网友在油管上看到的许多"深度伪造"视频,都依赖视频创作者从原本数小时的数据资料里进行提取编辑,最终才能制作非常简短的内容,并且呈现效果还很一般。而15.ai的开发者表示,自己的这项技术
可以轻松实现那些视频效果 (事实上15.ai的许多角色进行深度学习的数据时长只有几十分钟)。" (transl. "Many of the "deep fake" videos that netizens see on YouTube rely on video creators to extract and edit hours of data to produce very short content, and the presentation effect is still very average. The developers of 15.ai said that their technology can easily
achieve those video effects (in fact, the data for deep learning of many characters of 15.ai is only tens of minutes long).") ^ Parker 2022; Kar 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Kar 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Kar 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022; Enriquez 2022. ^ Ng 2020. ^ Ruppert 2022. ^ Ng 2020. ^ Ng 2020. ^ Ruppert 2021; Morton 2021. ^ Darker 2022. ^ Ng 2020. ^ Ruppert 2022. ^ Ng 2020. ^ 
2024. ^ Ruppert 2021. ^ Zwiezen 2021; Morton 2021. ^ Scotellaro 2020d; Abisola 2025. ^ Zwiezen 2021; Ruppert 2021. ^ Staniszewski 2024; Play.ht 2024; Weitzman 2023. ^ Play.ht 2024. ^ Weitzman 2023. ^ Staniszewski 2024. ^ Irpan, Alex (July 19, 2023).
 "Machine Learning Got Itself in a Big Damn Hurry". Sorta Insightful. Retrieved April 14, 2025. ^ Osman 2022. ^ Ren et al. 2019. ^ Chandraseta 2021; Button 2021; Temitope 2024. ^ OpenAI 2024; Temitope 2024. ^ OpenAI 2
December 19, 2024 - via Twitter. ^ "Troy Baker Faces Mass Backlash For Supporting Shady AI Voice NFTs With Company That Has Stolen Work". YouTube. January 14, 2022. Retrieved March 23, 2025. ^ The VOC Podcast. April 11, 2021
Retrieved January 15, 2025. ^ "Nate listens to his AI self". Twitch. Retrieved January 21, 2025. Abisola, Shojobi (January 3, 2025). "The MIT Project That Paved Way For Modern Voice AI". Independent. Archived from the original on February 27, 2025. Retrieved February 27, 2025. Aktas, Utku (January 19, 2022). "Troy Baker-backed NFT firm
admitted using voice lines from another service without permission". Mobidictum. Archived from the original on June 14, 2025. Barakat, Huda; Turk, Oytun
Demiroglu, Cenk (2024). "Deep learning-based expressive speech synthesis: a systematic review of approaches, challenges, and resources". EURASIP Journal on Audio, Speech, and Music Processing. 2024 (11). doi:10.1186/s13636-024-00329-7. Baylos, Ramón (January 17, 2022). "La compañía de NFTs que se alió con el actor de voz de Joel de The
Last of Us la ha liado bastante parda" [The NFT company that partnered with the voice actor of Joel from The Last of Us has made quite a mess of things.]. Sport.es (in Spanish). Archived from the original on January 23, 2025. Retrieved March 25, 2025. Beckwith, Michael (January 17, 2022). "NFT firm Voiceverse admits it stole work after announcing
Troy Baker deal". Metro. Retrieved February 28, 2025.[unreliable source?] Button, Chris (January 19, 2021). "Make GLaDOS, SpongeBob and other friends say what you want with this AI text-to-speech tool". Byteside. Archived from the original on June 25, 2024. Retrieved December 18, 2024. Cabibi-Wilkin, Lily (January 26, 2022). "NFTs Are Bad. So
Why Do People Keep Making Them?" (PDF). The Herald. Jonesboro, Arkansas: Arkansas: Arkansas: Arkansas: Arkansas State University. p. 2A. Archived (PDF) from the original on July 6, 2024. Retrieved March 4, 2025. Carcasole, David (January 17, 2022). "Troy Baker's NFT Partner Company Caught Claiming Voice Lines From Another Service As Their Own". PlayStation Universe.
Archived from the original on October 6, 2022. Retrieved February 28, 2025. Chandraseta, Rionaldi (January 21, 2021). "Generate Your Favourite Characters' Voice Lines using Machine Learning". Towards Data Science. Archived from the original on January 21, 2021. Retrieved December 18, 2024. Clayton, Natalie (January 19, 2021). "Make the cast
of TF2 recite old memes with this AI text-to-speech tool". PC Gamer. Archived from the original on January 19, 2021. Retrieved December 18, 2024. Cocomello, Marco (January 20, 2021). "Make Portal's GLaDOS and Other Characters Say Whatever You Want With This New App". GLITCHED. Archived from the original on March 12, 2025. Retrieved
March 10, 2025. "CNN Newsroom". CNN. January 15, 2021. do Prado, Renan (January 19, 2021). "Faça GLaDOS, Bob Esponja e outros personagens falarem textos escritos por você!" [Make GLaDOS, SpongeBob and other characters speak texts written by you!]. Arkade (in Brazilian Portuguese). Archived from the original on August 19, 2022.
Retrieved December 22, 2024. "Can I publish the content I generate on the platform?". ElevenLabs (Official website). 2024b. Archived from the original on December 23, 2024. Retrieved December 23, 2024. Retrieved December 23, 2024. Retrieved December 23, 2024. Retrieved December 23, 2024. The original on December 23, 2024. Retrieved December 24, 2024. Retrieved December 25, 2024. Retrieved December 26, 2024. Retrieved December 27, 2024. Retrieved December 27, 2024. Retrieved December 28, 2024. Retrieved D
23, 2025. Retrieved March 23, 2025. "15.ai已经重新上线,版本更新至v23" [15.ai has been re-launched, version updated to v23]. EquestriaCN (in Chinese). October 1, 2024. Feng, Bai (March 15, 2020). "模型参数过亿跑不动?看MIT小哥,少量数据完成高质量文本转语音!" [Model has
over 100 million parameters and won't run? Check out this MIT guy who achieves high-quality text-to-speech with minimal data!]. QQ News (in Chinese). XinZhiYuan. Archived from the original on February 27, 2025. Retrieved February 22, 2025. Retrieved February 22, 2025. This Website Can Use AI to Generate Voice, Making
ACG Characters "Say" the Text You Input]. GamerSky (in Chinese). January 18, 2021. Archived from the original on December 11, 2024. Retrieved March 23, 2025. "Audio samples from "Semi-Supervised Training for Improving
Data Efficiency in End-to-End Speech Synthesis"". August 30, 2018. Archived from the original on November 11, 2020. Retrieved June 5, 2022. Groth-Anderson, Magnus (January 19, 2022). "Troy Baker-støttet NFT-virksomhed indrømmer at have stjålet indhold" [Troy Baker-backed NFT company admits to stealing content]. Gamereactor (in Danish)
```

Portal to Say Your Desired Lines]. AUTOMATON (in Japanese). Archived from the original on January 19, 2021. Retrieved December 18, 2024. Lam, Khoa (January 14, 2022.) "Incident 277: Voices Created Using Fubility Available App Stolen and Resold as NFT without Attribution". All Incident Databases. Archived from the original on January 19, 2025. Retrieved December 23, 2021. "Insight Each SagkEd Wall Sail To Line Company Reassuring Fans That They Aven't Getting linto NFTs". The Mary Sue. Archived from the original on January 13, 2025. Retrieved December 19, 2024.
Muropaketti (in Finnish). January 17, 2022. Archived from the original on May 25, 2022. Retrieved March 1, 2025. Myrén, Jonny (January 18, 2022). "NFT-företaget som Troy Baker marknadsför tog ljudklipp från annan tjänst" [The NFT company that Troy Baker promotes took audio clips from another service]. FZ (in Swedish). Archived from the
25, 2024. Retrieved December 18, 2024. Osman, Mohamed (2022). Emo-TTS: Parallel Transformer-based Text-to-Speech Model with Emotional Awareness. IEEE. pp. 169–174. doi:10.1109/ICCI54321.2022.9756092. ISBN 978-1-6654-9973-6. Retrieved April 4, 2025. Oxton (January 20, 2021). "При помощи АІ можно озвучить набранный текст
English in Game Character Voices]. Tistory (in Korean). Archived from the original on December 20, 2024. Retrieved December 20, 2024. Retrieved December 20, 2024. Retrieved December 22, 2024.
the original on January 17, 2022. Retrieved December 31, 2024. Piletsky, Boris (January 15, 2022). "Cоздателей NFT-голосов, которых поддержал Трой Бейкер, уличили в краже голосов в тот же день" [NFT vote creators backed by Troy Baker were caught stealing votes on the same day]. iXBT Games. Archived from the original on September 2023. Retrieved March 23, 2025. "Everything You Need to Know About 15.ai: The AI Voice Generator". Play.ht. September 12, 2024. Retrieved December 18, 2024. Retrieved December 25, 2024. Retrieved December 26, 2024. Retrieved December 26, 2024. Retrieved December 27, 2024. Retrieved December 28, 2024. Retrieved December 29, 2024. Retrieved December 2
arXiv:1905.09263. "Free 15.ai Character Voice Cloning and Alternatives". Resemble.ai. October 17, 2024. Retrieved December 31, 2024. Retrieved December 31, 2024. Rugona, Calvin (January 22, 2021). "Make GLaDos And Other Characters Say What You Want". Gamezo. Archived from the original on March 21, 2025. Retrieved March 22, 2025. Ruppert, Liana (January 18, 20
2024. Scotellaro, Shaun (2020c). "Neat "Pony Preservation Project" Using Neural Networks to Create Pony Voices". Equestria Daily. Archived from the original on June 23, 2021. Retrieved December 18, 2024. Scotellaro, Shaun (2020d). "Full Simple Animated Episode - The Tax Breaks (Twilight)". Equestria Daily. Retrieved January 1, 2025. Scotellaro, Shaun (2020d).
Retrieved May 19, 2025. Skorich, Lina (January 15, 2022). "Трою Бейкеру пришлось извиняться за решение сотрудничать с NFT-компанией" [Troy Baker forced to apologize for decision to partner with NFT company]. StopGame. Archived from the original on October 2, 2022. Retrieved March 23, 2025. Staniszewski, Mati (2024). "15.AI: Everything You Need to Know & Best Alternatives". ElevenLabs (Official website). Archived from the original on December 28, 2024. Temitope, Yusuf (December 18, 2024). "15.AI:
Retrieved December 25, 2024. Toh, Brandon (January 18, 2022). "Troy Baker's NFT Partner Company Voice Lines From Another Service Without Permission". Geek Culture. Archived from the original on November 30, 2022. Retrieved February 28, 2025. 遊戲, 遊戲角落 (January 28, 2021). "這個AI語音可以模仿《傳送門》GLaD 講出任何對白!連《Undertale》都可以學" [This AI Voice Can Imitate Portal's GLaDOS Saying Any Dialog! It Can Even Learn Undertale]. United Daily News (in Chinese (Taiwan)). Archived from the original on December 19, 2024. Retrieved December 18, 2024. Villalobos, José (January 18, 2021). "Descubre 15.AI, un sitio web en el que podrás hacer can GlaDOS diga lo que quieras" [Discover 15.AI, a Website Where You Can Make GlaDOS Say What You Want]. LaPS4 (in Spanish). Archived from the original on January 18, 2021. Retrieved January 18, 2021. Retrieved January 18, 2021. Retrieved January 18, 2021. Retrieved from the original on January 18, 2021. Retrieved January 18, 2021. R
on December 26, 2024. Retrieved December 18, 2024. W-K, Edie (January 15, 2022). "Troy Baker angers the internet with NFT partnership". Checkpoint Gaming. Archived from the original on December 25, 2024. Retrieved December 31, 2024. White, Molly (January 14, 2022). "Voice actor Troy Baker announces his involvement in "voice NFT" project Voiceverse with an antagonistic tweet, shortly before it's revealed that the project stole work". Web3 Is Going Just Great. Archived from the original on July 24, 2024.
Retrieved February 28, 2025. Williams, Demi (January 18, 2022). "Voiceverse NFT admits to taking voice lines from non-commercial service". NME. Archived from the original on January 17, 2022. Retrieved December 18, 2024. Wright, Steven (March 21, 2023). "Why Biden, Trump, and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December 18, 2024. Furushima, Takayuki (January 18, 2021). "Portal and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December 18, 2024. Furushima, Takayuki (January 18, 2021). "Portal and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December 18, 2024. Furushima, Takayuki (January 18, 2021). "Portal and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December 18, 2024. Furushima, Takayuki (January 18, 2021). "Portal and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December 18, 2024. Furushima, Takayuki (January 18, 2021). "Portal and Obama Arguing Over Video Games Is YouTube's New Obsession". Inverse. Archived from the original on December 20, 2024. Retrieved December
GLaDOSや『UNDERTALE』のサンズがテキストを読み上げてくれる。文章に込められた感情まで再現することを目指すサービス「15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」が話題に" [Portal's GLaDOS and UNDERTALE's Sans Will Read Text for You. "15.ai」を関います。
50) (20   50   100   250   500)Artificial intelligence (links   edit) Detical character recognition (links   edit) Parameter (links   edit) Speech synthesis (links   edit) Optical character recognition (links   edit) Reinforcement learning (links   edit) Sigmoid function (links   edit) Overfitting (links   edit) Speech synthesis (links   edit) Speech synthesis (links   edit) Optical character recognition (links   edit) Reinforcement learning (links   edit) Sigmoid function (links   edit) Optical character recognition (links   edit) Reinforcement learning (links   edit) Reinforcement learning (links   edit) Sigmoid function (links   edit) Speech synthesis (links   edit) Speech synthesis (links   edit) Reinforcement learning (links   edit) Reinforcement learning (links   edit) Sigmoid function (links   edit) Speech synthesis (links   edit) Speech synth
Mockingboard (links   edit) PSOLA (links   edit) FreeTTS (links   ed