Top 100+ Generative AI Applications / Use Cases in 2024

GenAI
Updated on May 12
24 min read

Written by Cem Dilmegani

Top 100+ Generative AI Applications / Use Cases in 2024

Generative AI applications produce novel and realistic visual, textual, and animated content within minutes.

- As you can see above, interest in generative AI exploded since October 2022 thanks to the launch of ChatGPT.
- Gartner predicts that by 2025, the percentage of data generated by generative AI will amount to 10% of all generated data. [1]
- Until 2025 AIMultiple expects generative AI to be responsible for a significant share of machine generated data and used to some degree in most of human generated data.

As one of the most important strategic technology trends of 2023, this branch of artificial intelligence (AI) has a wide variety of applications that are useful to different industries and business functions.

We gathered the top 100+ general and industry-specific generative AI applications including both enterprise generative AI use cases and those for smaller companies. We focused on real-world applications with examples but given how novel this technology is, some of these are potential use cases. For other applications of AI for requests where there is a single correct answer (e.g. prediction or classification), read our list of AI applications.

General Generative AI Applications

> Video Applications

1. Video Generation

OpenAI's Sora attracted significant attention with its impressive video generation capabilities.[2]

2. Video Prediction

A GAN-based video prediction system:

- Comprehends both temporal and spatial elements of a video
- Generates the next sequence based on that knowledge (See the figure below)
- Distinguishes between probable and non-probable sequences

GAN-based video predictions can help detect anomalies that are needed in a wide range of sectors, such as security and surveillance.

Source[3]: "Review of FutureGAN"

> Image Applications

3. Image Generation

With generative AI, users can transform text into images and generate realistic images based on a setting, subject, style, or location that they specify. Therefore, it is possible to generate the needed visual material quickly and simply.

It is also possible to use these visual materials for commercial purposes that make AI-generated image creation a useful element in media, design, advertisement, marketing, education, etc. For example, an image generator, can help a graphic designer create whatever image they

need (See the figure below).

Image generation is one of the most popular ones among the generative AI applications

This AI-generated image was produced based on the text description of “Teddy bears shopping for groceries in ukiyo-e style”. Source: OpenAI Dall-E

4. Semantic Image-to-Photo Translation

Based on a semantic image or sketch, it is possible to produce a realistic version of an image. Due to its facilitative role in making diagnoses, this application is useful for the healthcare sector.

Generative artificial intelligence is used in converting sketches to realist images

Source[4]: “Generating Synthetic Space Allocation Probability Layouts Based on Trained Conditional-GANs”

5. Image-to-Image Conversion

It involves transforming the external elements of an image, such as its color, medium, or form, while preserving its constitutive elements.

One example of such a conversion would be turning a daylight image into a nighttime image. This type of conversion can also be used for manipulating the fundamental attributes of an image (such as a face, see the figure below), colorize them, or change their style.

Photoshopping is another one among the visual generative AI apps

Source[5]: “FAE-GAN: facial attribute editing with multi-scale attention normalization”

6. Image Resolution Increase (Super-Resolution)

Generative AI uses various methods to create new content based on the existing content. Generative Adversarial Networks (GANs) are one of these methods. A GAN consists of a generator and a discriminator that creates new data and ensures that it is realistic. GAN-based method allows you to create a high-resolution version of an image through Super-Resolution GANs. This method is useful for producing high-quality versions of archival material and/or medical materials that are uneconomical to save in high-resolution format. Another use case is surveillance purposes.

7. 3D Shape Generation

In this area, research is still in the making to create high-quality 3D versions of objects. Using GAN-based shape generation, better shapes can be achieved in terms of their resemblance to the original source. In addition, detailed shapes can be generated and manipulated to create the desired shape.

3D shape generation is one of the generative AI applications

Source[6]: “SP-GAN: Sphere-Guided 3D Shape Generation and Manipulation”

> Audio Applications

8. Text-to-Speech Generator

GANs allow the production of realistic speech audios. To achieve realistic outcomes, the discriminators serve as a trainer who accentuates, tones, and/or modulates the voice.

The TTS generation has multiple business applications such as education, marketing, podcasting, advertisement, etc. For example, an educator can convert their lecture notes into audio materials to make them more attractive, and the same method can also be helpful to create educational materials for visually impaired people. Aside from removing the expense of voice artists and equipment, TTS also provides companies with many options in terms of language and vocal repertoire.

Using this technology, thousands of books have been converted to audiobooks.[7]

Learn more information on the capabilities of large language models in text generation.

9. Speech-to-Speech Conversion

An audio-related application of generative AI involves voice generation using existing voice sources. With STS conversion, voice overs can be easily and quickly created which is advantageous for industries such as gaming and film. With these tools, it is possible to generate voice overs for a documentary, a commercial, or a game without hiring a voice artist.

10. Music Generation

Generative AI is also purposeful in music production. Music-generation tools can be used to generate novel musical materials for advertisements or other creative purposes. In this context, however, there remains an important obstacle to overcome, namely copyright infringement caused by the inclusion of copyrighted artwork in training data.

Learn more about AI ethics from our comprehensive article.

> Text-based Applications

11. Idea Generation

LLM output may not be suitable to be published due to issues with hallucination, copyrights etc. However, idea generation is possibly the most common use case for text generation. Working with machines in ideation allows users to quickly scan the solution space.

It is surprising to get a machine's help in becoming more creative as a human. This is possibly because generative AI's capabilities are quite different (e.g. more flexible, less reliable) than how we typically think about machines' capabilities.[8]

12. Text Generation

Researchers appealed to GANs to offer alternatives to the deficiencies of the state-of-the-art ML algorithms. GANs are currently being trained to be useful in text generation as well, despite their initial use for visual purposes. Creating dialogues, headlines, or ads through generative AI is commonly used in marketing, gaming, and communication industries. These tools can be used in live chat boxes for real-time conversations with customers or to create product descriptions, articles, and social media content.

Explore more large language models examples and applications like text generation.

13. Personalized content creation

It can be used to generate personalized content for individuals based on their personal preferences, interests, or memories. This content could be in the form of text, images, music, or other media, and could be used for:

- Social media posts
- Blog articles
- Product recommendations

Personal content creation with generative AI has the potential to provide highly customized and relevant content.

14. Sentiment analysis / text classification

Sentiment analysis, which is also called opinion mining, uses natural language processing and text mining to decipher the emotional context of written materials.

Generative AI can be used in sentiment analysis by generating synthetic text data that is labeled with various sentiments (e.g., positive, negative, neutral). This synthetic data can then be used to train deep learning models to perform sentiment analysis on real-world text data.

It can also be used to generate text that is specifically designed to have a certain sentiment. For example, a generative AI system could be used to generate social media posts that are intentionally positive or negative in order to influence public opinion or shape the sentiment of a particular conversation.

These can be useful for mitigating the data imbalance issue for the sentiment analysis of users' opinions (as in the figure below) in many contexts such as education, customer services, etc.

Source[9]: “The Impact of Synthetic Text Generation for Sentiment Analysis Using GAN-based Models”

> Code-based Applications

15. Code generation

Another application of generative AI is in software development owing to its capacity to produce code without the need for manual coding. Developing code is possible through this quality not only for professionals but also for non-technical people.

Code generation is one of the fundamental generative AI applications

Generating an HTML form and JavaScript submit code with OpenAI’s ChatGPT

16. Code completion

One of the most straightforward uses of generative AI for coding is to suggest code completions as developers type. This can save time and reduce errors, especially for repetitive or tedious tasks.

17. Code review

Generative AI can also be used to make the quality checks of the existing code and optimize it either by suggesting improvements or by generating alternative implementations that are more efficient or easier to read.

18. Bug fixing

It can help identify and fix bugs in the generated code by analyzing code patterns, identifying potential problems, and suggesting fixes.

19. Code refactoring

Generative AI can be used to automate the process of refactoring code, making it easier to maintain and update over time.

20. Code style checking

Generative AI can analyze code for adherence to coding style guidelines, ensuring consistency and readability across a codebase.

Gain more insights into the use of generative AI in automating software development.

TEST AUTOMATION

21. Generating test cases

Generative tools like ChatGPT can help generate test cases based on user requirements or user stories, provide a clear description of the application’s functionality, and come up with multiple scenarios and test cases to cover various aspects of the application.

22. Generating test code

Tools like ChatGPT can convert natural language descriptions into test automation scripts. Understanding the requirements described in plain language can translate them into specific commands or code snippets in the desired programming language or test automation framework.

Test code generation is among the coding focused generative AI applications

NLP to test scripts via ChatGPT-4

23. Test script maintenance

As an AI language model, ChatGPT can assist in maintaining test scripts by identifying outdated or redundant code, suggesting improvements, and even automatically updating scripts when provided with new requirements or changes in the application.

24. Test documentation

Generative AI models can generate realistic test data based on the input parameters, such as creating valid email addresses, names, locations, and other test data that conform to specific patterns or requirements.

25. Test result analysis

ChatGPT and other similar tools can analyze test results and provide a summary, including the number of passed/failed tests, test coverage, and potential issues.

For more on test automation use cases and challenges, check our article.

> Other Applications

26. Conversational AI

Another use case of generative AI involves generating responses to user input in the form of natural language. This type is commonly used in chatbots and virtual assistants, which are designed to provide information, answer questions, or perform tasks for users through conversational interfaces such as chat windows or voice assistants.

ChatGPT is a popular example for conversational AI. It offers a highly informative and integrated conversation to users, like philosophical discussions. For an example, you can check a chat with the ChatGPT below.

A conversation with ChatGPT

Understand the distinctions between conversational AI and generative AI. Navigate through the nuances in this article on conversational AI vs. generative AI.

27. Data Synthesis

Generative AI systems can create synthetic data that is similar in statistical properties to real-world data, but is not necessarily based on any specific real-world data points. The synthesized data can be used for various purposes:

- training data for machine learning models
- maintaining data privacy by creating new data from the input data of customers
- feeding natural language processing of generative AI algorithms for achieving human-like speech

28. Data visualization

Some generative models like ChatGPT can perform data visualization which is useful for many areas. It can be used to load datasets, perform transformations, and analyze data using Python libraries like pandas, numpy, and matplotlib. You can ask ChatGPT Code Interpreter to perform certain analysis tasks and it will write and execute the appropriate Python code. Also, you can ask the model to visualize your data in a preferred format.

Data analysis with ChatGPT code interpreter

Learn what is ChatGPT Code Interpreter and its use cases from our article.

29. File conversion

ChatGPT code interpreter can convert files between different formats, provided that the necessary libraries are available and the operation can be performed using Python code.

30. Solving mathematical problems

Generally, large language models are capable of understanding mathematical questions and solving them. This includes basic problems but also complex ones as well, depending on the model. Below is an example of ChatGPT's capabilities in this.

Source: OpenAI[10]

Industry-specific Generative AI Applications

> Healthcare Applications

31. Streamlined drug discovery and development

Leveraging the power of generative AI algorithms to find potential drug candidates and testing their efficacy with computer simulations could vastly expedite the process of discovering new drugs, from preclinical trials on animals to clinical tests on humans.

32. Personalized medicine

Generative AI models can serve as medical chatbots to understand patients symptoms and produce diagnoses with increasing accuracy based on patient declarations and test results. [11]

Then, these models can craft individualized treatment plans tailored specifically for a patient's medical history, symptoms and more.

33. Improved medical imaging

By combining the power of machine learning with medical imaging technologies, such as CT and MRI scans, generative AI algorithms can accelerate precision in medical imaging with improved results.

14-hour-long progressive outputs of a generative AI model to produce synthetic (i.e. artificial) chest X-rays. [12]

Source:: Future Healthcare Journal

34. Population health management

Using generative AI in healthcare can also lead to better population-level health management by allowing policymakers to:

- Access more detailed demographic information
- Design targeted public health initiatives that benefit underserved communities.

For more on such healthcare use cases of generative AI, check our generative AI in healthcare article.

> Education Applications

35. Personalized lessons

By leveraging generative AI, personalized lesson plans can provide students with the most effective and tailored education possible. These plans are crafted by analyzing student data such as their past performance, skillset, and any feedback they may have given regarding curriculum content. This helps ensure that each student, especially those with disabilities, is receiving an individualized experience designed to maximize success.

36. Course design

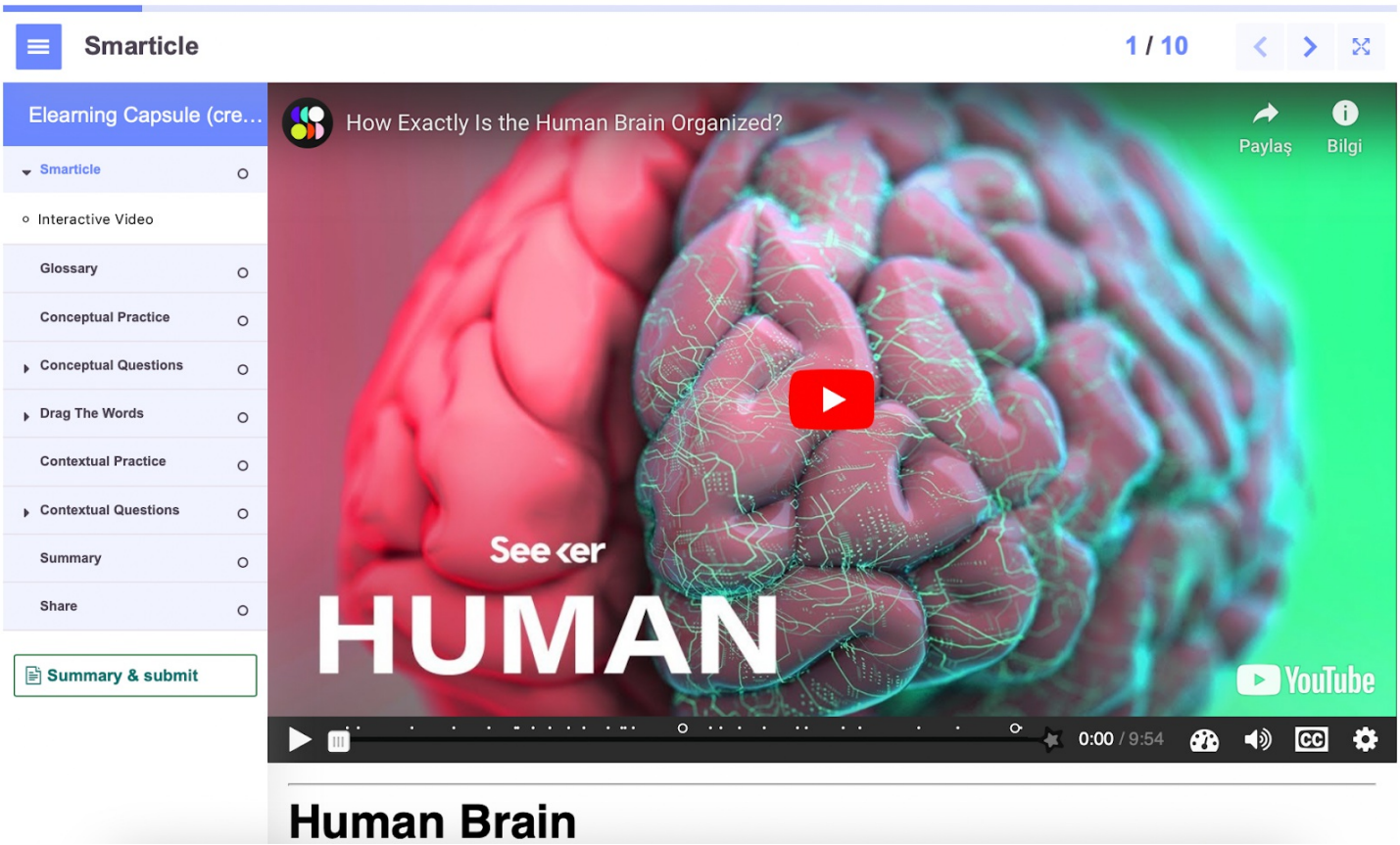
From designing syllabi and assessments to personalizing course material based on students' individual needs, generative AI can help make teaching more efficient and effective. Furthermore, when combined with virtual reality technology, it can also create realistic simulations that will further engage learners in the process.

37. Content creation for courses

Generative AI offers teachers a practical and effective way to develop massive amounts of unique material quickly. Whether it's quiz questions, reviews of concepts or explanations, this technology can generate brand-new content from existing information to help educators easily create diverse teaching materials for their classes.

Also, AI can generate scripts for video lectures or podcasts, streamlining multimedia content creation for online courses (see the figure below).

An example of AI-generated course content.



Source: NOLEJ

38. Tutoring

AI-generated tutoring is another use case of generative AI. It can allow students to interact with a virtual tutor and receive real-time feedback in the comfort of their home. This makes it an ideal solution for those children who may not have access to traditional face-to-face education.

39. Data privacy protection for analytical models

One advantage of using generative AI to create training data sets is that it can help protect student privacy. A data breach or hacking incident can reveal real-world data containing personal information about school age children.

Using synthetic data, which is created by AI models that have learned from real-world data, can provide anonymity and protect students' personal information. Synthetic data sets produced by generative models are effective and useful for training other algorithms, while being secure and safe to use.

40. Restoring old learning materials

Generative AI can improve the quality of outdated or low-quality learning materials, such as historical documents, photographs, and films. By using AI to enhance the resolution of these materials, they can be brought up to modern standards and be more engaging for students who are used to high-quality media.

For more on the use cases of generative AI in education, take a look at our article on generative AI use cases in education.

> Fashion Applications

41. Creative designing for fashion designers

Generative AI is a valuable tool that can bring new life to fashion designs. From creating innovative styles to refining and optimizing existing looks, the technology helps designers keep up with the latest trends while maintaining their creativity in the process. This can be done by a variety of techniques such as unique generative design or style transfer from other sources.

Garments generated by ClothingGAN.

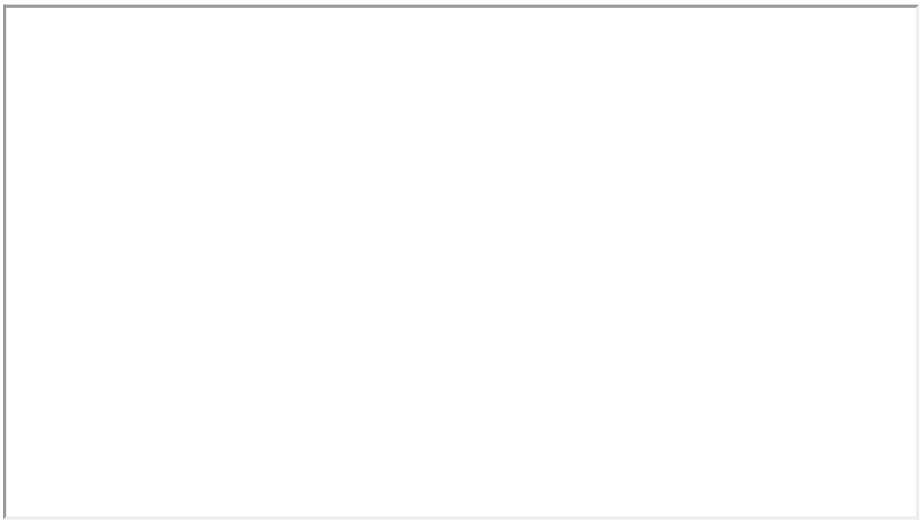
Source: Towards Data Science

42. Turning sketches into color images

Utilizing Generative AI, the fashion industry can save both precious time and resources by quickly transforming sketches into vibrant pictures. This technology allows designers and artists to experience their creations in real-time with minimal effort while also providing them more opportunity to experiment without hindrance.

43. Generating representative fashion models

By leveraging generative AI to create a variety of fashion models, fashion companies can better serve their diverse customer base and accurately display their products in a more authentic manner. They can use such models for virtual try-on options for customers or 3D-rendering of a garment.



44. Marketing & Trend Analysis for Fashion Brands

Generative AI can help trend analysis in fashion by:

- Bringing together a variety of techniques, such as machine learning and probabilistic programming. These techniques allow for powerful generative models that consider the customer desires in the fashion business.

- Generating deeply personalized options for specific consumer desires that go beyond what traditional analytics and customer demand algorithms can do.

It also improves fashion marketing capabilities by:

- Utilizing data analysis, natural language processing and machine learning to create a highly tailored and personalized product range for the target audience
- Designing emails, website pages, captions, and ads that are tailored to a specific person's interests and preferences in order to engage them
- Plotting creative and authentic marketing and ad content that are likely to storm search results

For more on how generative AI is used in the fashion industry, check our article on the generative AI use cases in fashion.

> Banking Applications

45. Fraud detection

Generative AI provides banks with a powerful tool to detect suspicious or fraudulent transactions, enhancing the ability to combat financial crime. Training GANs for the purpose of fraud detection, by utilizing it with a training set of fraudulent transactions, helps identify underrepresented transactions.

46. Risk management

By leveraging GANs, it is possible to compute value-at-risk estimations that display the potential amount of loss in certain periods or build economic scenarios for forecasting financial markets. Moreover, GANs aids in understanding volatility by generating new and assumption-free situations founded on historical data trends.

47. Generating user-friendly explanations for loan denial

Decision makers and loan applicants need to understand the explanations of AI-based decisions, including why the loan applications were denied. A conditional GAN is a useful tool to create applicant-friendly denial explanations as in the figure below.

AI-generated loan decline explanations.

Source[13]: "Generating User-Friendly Explanations for Loan Denials Using Generative Adversarial Networks"

48. Data privacy protection

The use of synthetic data generated by AI has the potential to overcome the challenges that the banking industry is facing, particularly in the context of data privacy. Synthetic data can be used to create shareable data in place of customer data that cannot be shared due to privacy concerns and data protection laws. Further, synthetic customer data are ideal for training ML models to assist banks determine whether a customer is eligible for a credit or mortgage loan, and how much can be offered.

For more, you can check our articles on the:

- use cases of generative AI in banking
- generative AI applications in financial services

> Gaming Applications

49. Procedural content generation

Generative AI can generate game content, such as levels, maps, and quests, based on predefined rules and criteria. This can help game developers to create more varied and interesting game experiences.

50. Player behavior analysis

It can be used to analyze player data, such as gameplay patterns and preferences, to provide personalized game experiences. This can help

game developers to increase player engagement and retention.

51. Non-player character (NPC) behavior

Generative AI can create realistic and dynamic NPC behavior, such as enemy AI and NPC interactions. This can help game developers to create more immersive and challenging game worlds.

52. User interface design

Generative AI can design user interfaces that are intuitive and user-friendly. This can help game developers to improve the player experience and increase player engagement.

53. Game testing

Generative programming tools can be used to automate game testing, such as identifying bugs and glitches, and providing feedback on gameplay balance. This can help game developers to reduce testing time and costs, and improve the overall quality of their games.

> Travel Applications

54. Identity verification

The utilization of generative AI in face identification and verification systems at airports can aid in passenger identification and authentication. This is accomplished by generating a comprehensive image of a passenger's face utilizing photographs captured from various angles, streamlining the process of identifying and confirming the identity of travelers.

55. Personalized travel and destination recommendations

Generative AI can be used to analyze customer data, such as past bookings and preferences, to provide personalized recommendations for travel destinations, accommodations, and activities.

> Retail Applications

56. Product and display design

Generative AI can create new product designs based on the analysis of current market trends, consumer preferences, and historic sales data. The AI model can generate multiple variations, allowing companies to shortlist the most appealing options.

For instance, creating designs for clothing, furniture, or electronics can be an option. Or personalizing the display options according to customer choice is another option.

57. Automated retail content generation

Retailers can use AI to create descriptions for their products, promotional content for social media, blog posts, and other content that improves SEO and drives customer engagement.

58. Product recommendations

Using generative models, AI can suggest new or alternative products to customers that they might be interested in, based on their buying history and preferences. It can also anticipate their future needs and preferences, thereby improving the shopping experience.

59. Inventory management & supply chain optimization

Generative AI can help forecast demand for products, generating predictions based on historical sales data, trends, seasonality, and other factors. This can improve inventory management, reducing instances of overstock or stockouts.

60. Virtual shopping assistants

Generative AI can power conversational virtual assistants that help customers in their shopping journey, generating responses to their queries

and guiding them through the purchasing process.

For more, check our article on the use and examples of generative AI in the retail industry.

> Insurance Applications

61. Policy documentation

Generative AI tools can help generate policy documents based on user-specific details. It can automatically fill in the information where necessary, speeding up the process of creating these documents.

62. Risk assessment and premium calculation

Generative AI can be used to simulate different risk scenarios based on historical data and calculate the premium accordingly. For example, by learning from previous customer data, generative models can produce simulations of potential future customer data and their potential risks. These simulations can be used to train predictive models to better estimate risk and set insurance premiums.

63. Fraud detection

Generative AI can generate examples of fraudulent and non-fraudulent claims which can be used to train machine learning models to detect fraud. These models can predict if a new claim has a high chance of being fraudulent, thereby saving the company money.

For more, check out our article on the 5 technologies improving fraud detection in insurance.

64. Customer profiling

Generative AI can be used to generate synthetic customer profiles that help in developing and testing models for customer segmentation, behavior prediction, and personalized marketing without breaching privacy norms.

65. Claims processing

Generative AI models can be employed to streamline the often complex process of claims management. They can generate automated responses for basic claim inquiries, accelerating the overall claim settlement process and shortening the time of processing insurance claims.

66. Policy generation

Generative AI models can generate personalized insurance policies based on the specific needs and circumstances of each customer. Based on data about the customer, such as age, health history, location, and more, the AI system can generate a policy that fits those individual attributes, rather than providing a one-size-fits-all policy.

67. Predictive analysis & scenario modeling

Generative AI models can generate thousands of potential scenarios from historical trends and data. The insurance companies can use these scenarios to understand potential future outcomes and make better decisions.

For more detail on these use cases, check our article on generative AI in insurance.

> Manufacturing Applications

68. Predictive maintenance

By using machine learning algorithms, manufacturers can predict equipment failures and maintain their equipment proactively. These models can be trained on data from the machines themselves, like temperature, vibration, sound, etc. As these models learn this data management, they can generate predictions about potential failures, allowing for preventative maintenance and reducing downtime.

69. Quality control

AI can help improve quality control processes in manufacturing. By learning from images of products in the past and identifying those that were defective, generative AI tools can generate a model to predict whether a newly manufactured product is likely to be defective.

70. Production planning and inventory management

Generative AI models can simulate various production scenarios, predict demand, and help optimize inventory levels. It can use historical customer data to predict demand, thereby enabling more accurate production schedules and optimal inventory levels.

For more on these and other use cases of generative AI in manufacturing, check our article.

Business-function-specific Generative AI Applications

> Customer Service Applications

71. Multilingual customer support

The multilingual support offered by generative AI tools like ChatGPT for customer service involves using the large language model capabilities of the system to provide support to customers who speak different languages. Conversational AI tools can be trained on a variety of languages, and it can translate messages from one language to another in real-time.

An exemplary multilingual customer response generated by ChatGPT.
Discover the diverse business applications of ChatGPT, in this insightful article on ChatGPT for Business.

72. Personalized customer responses

Conversational generative AI tools can be trained on customer data, such as:

- Past purchases
- Chat history
- Customer feedback

to create a personalized profile for each customer. When a customer sends a message, ChatGPT or other similar tools can use this profile to provide relevant responses tailored to the customer's specific needs and preferences.

73. Quick responses to customer inquiries & complaints

Conversational tools can be trained to recognize and respond to common customer complaints, such as issues with product quality, shipping delays, or billing errors. When a customer sends a message with a complaint, the tool can analyze the message and provide a response that addresses the customer's concerns and offers potential solutions.

74. Creating customer emails

Tools like ChatGPT can create personalized email templates for individual customers with given customer information. When the company wants to send an email to a customer, ChatGPT can use a template to generate an email that is tailored to the customer's individual preferences and needs.

ChatGPT provides an email template for a certain customer problem.

75. Replying to customer reviews

When a customer leaves a review or comment on online review platforms or your website, ChatGPT or other tools can be used to generate a response that addresses the customer's concerns and offers potential solutions or assistance.

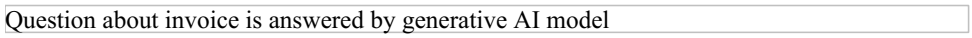
76. Answering FAQs

For example, ChatGPT can be trained on a company's FAQ page or knowledge base to recognize and respond to common customer questions. When a customer sends a message with a question, ChatGPT can analyze the message and provide a response that answers the customer's question or directs them to additional resources.

> Finance Applications

Finance teams deal with semi-structured data which can be queried using generative AI solutions:

- AP automation / invoice processing: Generative AI solutions go beyond extracting key-value pairs from documents and allow users to query documents in a flexible manner, helping unlock automation for more complex documents.



Invoice processing with generative AI [14]

AP teams don't need to switch their systems of record like ERP to take advantage of such technologies, their ERP can be enriched via plugins as outlined in these articles:

- Blackbaud AP automation
- Dynamics AP automation
- NetSuite AP automation
- SAGE AP automation

For more, see AI applications in accounts payable.

> Marketing Applications

77. Content creation for marketing

Content creation, text generation in specific, by using generative models like ChatGPT can be a powerful tool for marketing. These AI-generated texts can be used for a variety of purposes other than generating ideas, such as:

- Content creation for content marketing in the forms of emails, social media posts, blog articles, etc.
- Script writing and storytelling for advertising goods and services (see the figure below)

An example of an AI generated content for advertising a new electric car model by using ChatGPT.

Explore how to use generative AI in content creation, specifically copywriting. Explore its applications in this article on generative AI copywriting.

78. Personalized customer experience

ChatGPT and other similar generative tools with their natural language processing (NLP) can generate personalized content for your customers based on their preferences, past behavior, and demographics. This can help you create targeted content that resonates with your audience, which can lead to higher engagement and conversion rates.
Elevate your sales strategy with the integration of conversational AI. Discover how it enhances customer interactions in this article on conversational AI for sales.

79. Audience research

Generative AI can be used to analyze customer data such as:

- Search queries
- Social media interactions
- Past purchases to identify patterns and trends in customer behavior.

By analyzing this data, generative AI tools can help you identify your target audience's preferences, interests, and pain points, which can inform your marketing messaging, content, and product development.

80. Writing product descriptions

Product descriptions are a crucial part of marketing, as they provide potential customers with information about the features, benefits, and value of a product. Generative tools like ChatGPT can help create compelling and informative product descriptions that resonate with your target audience.

81. Creating customer surveys

Surveys are an effective way to gather feedback and insights from customers, which can help marketers improve their products, services, and marketing strategies. Here are some ways that generative AI can help with creating customer surveys:

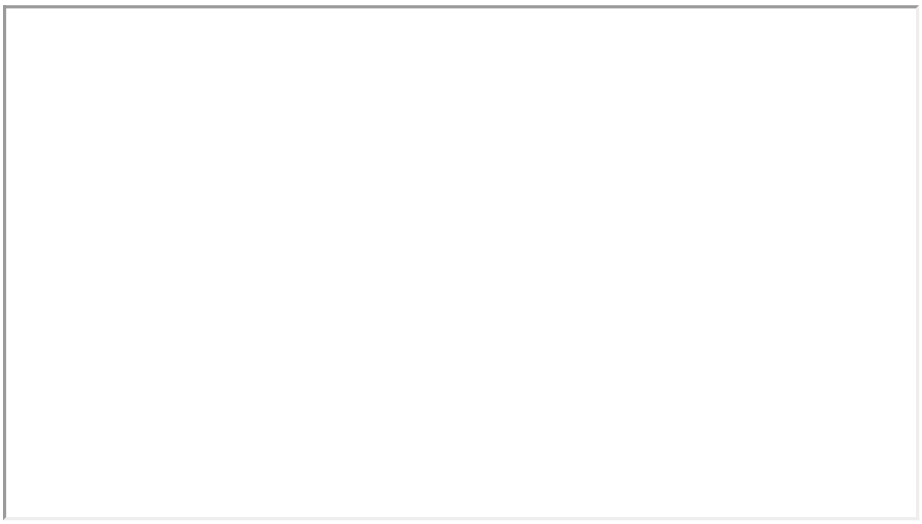
- Question generation
- Organizing survey structure
- Making surveys multilingual with its translation ability
- Survey analysis

82. Generating video ads or product demos

Video generation application of generative AI can be useful for marketing in:

- Video ads: With generative AI, businesses can create high-quality video ads that can be used on various platforms, including social media and video sharing sites. This can help to increase brand awareness and drive conversions.
- Product demos: Video generation can also be used to create product demo videos. By using generative AI to create these videos, businesses can showcase their products in a visually appealing way, which can help to increase engagement and sales.

The video below is generated by AI and shows its visual potentials to be used for marketing purposes.



Email marketing campaigns

Leveraging generative AI for email marketing supports marketing processes by streamlining automation, increasing personalization and creativity with engaging content generation.

Generative AI tools can be utilized to generate personalized:

83. Email text

84. Subject lines

85. Images within the email body

86. Call-to-actions (CTAs).

Other use cases within email marketing include:

87. Automation of email responses

88. Target audience selection

89. Optimization of email delivery times

SEO Applications

90. Generating topic ideas for content writing

Generative tools like ChatGPT can be used for generating topic ideas for SEO content writing by utilizing its language processing capabilities to:

- produce relevant keywords and phrases
- analyze competitors' content to identify gaps in coverage
- suggest topics based on current trends and user search queries

91. Conducting keyword research

The process of including related keywords to a content is crucial for a successful SEO strategy as it helps determine the terms and phrases that potential customers use when searching for products or services related to the website's offerings.

Generative tools like ChatGPT can perform functions in keyword search optimization such as:

- Generating keywords: It can generate a list of relevant keywords for a topic or theme by analyzing the context and language used in the provided information.
- Identifying keyword trends: It can analyze search data to identify current keyword trends and suggest terms that are likely to be popular in the near future.

Generating keyword ideas for B2B marketing content with ChatGPT.

92. Finding the right titles

Generative tools like ChatGPT can generate SEO-friendly titles by ensuring that the titles are:

- descriptive and clearly convey the topic of the content
- capable of incorporating relevant keywords that are related to the topic
- concise and to the point, typically falling within the 60-70 character limit for optimal display in search engine results pages.
- eye-catching and likely to attract clicks, which can help improve click-through rate (CTR) and ultimately, SEO

93. Grouping search intent

Understanding the search intent behind a query is crucial in creating content that accurately and effectively addresses the needs of the customers, which can lead to higher engagement and conversions.

Tools like ChatGPT can assist in search intent grouping by analyzing search queries and categorizing them based on the user's intended goal or purpose, thanks to Natural Language Processing (NLP) methods. This can help businesses and marketers understand the intent behind specific search terms and optimize their content and strategies to better meet the needs and expectations of their target audience.

94. Creating content structure

Tools like ChatGPT can assist in creating content structure by generating outlines and organization suggestions for a given topic. This can be useful for SEO maximization because a well-structured and organized content not only provides a better user experience but also helps search engines understand the context and relevance of the content.

ChatGPT creates the structure of a content.

95. Generating meta descriptions

A meta description is an HTML attribute that provides a brief summary of a web page's content. The meta description serves as an advertisement for the page, encouraging users to click on the link and visit the page. Therefore, meta descriptions are an important element in SEO.

ChatGPT can be used in creating effective meta descriptions by generating summaries of the content that accurately and concisely describe the main topic of a page.

96. Creating sitemap codes

A sitemap is a code that lists all the pages and content of a website in a structured format. It is a type of XML file that helps search engines understand the structure and organization of a website. The sitemap code provides information about each page on a website, such as its URL, the date it was last modified, and its priority relative to other pages on the site.

ChatGPT can be used in generating sitemap codes producing an XML file that lists all the pages and content on a website.

For more on the use cases and benefits of generative AI for SEO maximization, check our article on ChatGPT SEO scoring.

> HR Applications

97. Creating interview questions

HR departments often need to come up with a set of questions to ask job candidates during the interview process, and this can be a time-consuming task. AI can be used to generate interview questions that are relevant to the job position and that assess the candidate's qualifications, skills, and experience.

ChatGPT creates a set of interview questions for a job position.

98. Generating onboarding materials

AI can be used to generate onboarding materials for new employees, such as training videos, handbooks, and other documentation.

99. Job description generation

Generative AI can be used for creating job descriptions that accurately reflect the required skills and qualifications for a particular position.

> Supply Chain & Procurement Applications

100. Demand forecasting and supply chain management

Generative AI can help businesses predict demand for specific products and services to optimize their supply chain operations accordingly. This can help businesses reduce inventory costs, improve order fulfillment times, and reduce waste and overstocking.

Explore how generative AI transforms supply chain operations by predicting demand and optimizing processes. Dive into the details with this article on generative AI in supply chain.

> Legal Applications

101. Contract generation

Generative AI can be used to generate contracts based on pre-defined templates and criteria. This can save time and effort for procurement departments and help to ensure consistency and accuracy in contract language.

102. Contract compliance

Companies have thousands of contracts with various negotiated terms. LLMs or generative AI applications with language understanding capabilities can:

- Categorize contracts
- Identify common terms
- Highlight unique or rare terms

> Sales Applications

103. Sales coaching

Generative AI can be used to provide personalized sales coaching to individual sales reps, based on their performance data and learning style.

This can help sales teams to improve their skills and performance, and increase sales productivity.

104. Sales forecasting and pipeline optimization

Generative AI can analyze historical sales data and generate forecasts for future sales. So, sales teams can optimize their sales pipeline and allocate resources more effectively.

105. Lead identification and qualification

AI can be used to identify potential sales leads based on customer data and behavior, and qualify leads based on their likelihood to convert. Also, it can generate customized sales tactics and campaigns for generating leads.

106. Sales video generation

Generative AI can be used to create personalized sales videos tailored specifically to the respected customers' needs and expectations. These personalized sales videos enable sales reps to individually address sales goals, increase personal relationships with the customers and generate more leads. Check out sales video software to learn more about sales video generation.

Explore statistical insights derived from generative AI applications in various business functions. Read more about it in the article on generative AI stats.

> Audit Applications

107. Audit reporting automation

Manual processes, such as reporting, could be time consuming and error-prone. Generative models like ChatGPT can help auditors automate repetitive tasks, such as paperwork and reports. Specifically, it can produce standardized reports (such as in the figure below) that offer consistency in how findings are presented.

---

108. Data analysis of documents

Audit programs involve the frequent analysis of large swaths of financial and operational data.

ChatGPT can automate some of these data analysis duties, such as in:

- Performing computations
- Aggregations
- Dataset comparisons

109. Real-time risk monitoring

Generative AI tools can also be helpful in real-time risk monitoring. Auditors can interact with the model to discuss the organization's activities, control systems, and business environment. ChatGPT, for example, can assist auditors in assessing risk levels identifying priority areas for more investigation, and get insights into potential hazards.

110. Pattern recognition and anomaly detection

Generative AI can help auditors to spot and flag audit abnormalities for further examination. When incorporated with human evaluation correctly, generative AI tools can be useful in identifying potential fraud and enhancing internal audit functions.

Auditors can use generative AI models' natural language processing capabilities to reveal potential risks that might be difficult to identify manually by feeding it relevant data and asking it to look for odd or unexpected patterns.

111. Training auditors

ChatGPT is widely used in education to help students, teachers, and researchers. In audit, it can train auditors by offering them expertise, explanations, and examples that are relevant to their jobs. It can offer educational materials such as:

- Conceptual knowledge
- Case studies

For more on the use of generative AI for audit, check our article.

Our comprehensive guide can help you learn more about Generative AI tools and their specific applications.

FAQ

What is generative AI?

Generative AI refers to artificial intelligence algorithms designed to create new content or data that is similar to human-generated examples. This can include text, images, music, and other types of media. These AI systems learn from a large set of existing data and then use that knowledge to generate new, original content that resembles the learned material.

What are the popular generative AI products?

GPT by OpenAI: This is an advanced language model series known for its ability to generate coherent and contextually relevant text based on given prompts. It's used in applications like chatbots, content creation, and language translation.

DALL-E by OpenAI: A specialized AI for generating images from textual descriptions, DALL-E is known for its creativity and ability to create complex and detailed images based on specific prompts.

DeepMind's AlphaFold: This AI system is used for predicting protein structures with remarkable accuracy, which is a significant advancement in biological research and drug discovery.

Google BERT: Although primarily a language understanding model, BERT has significantly improved the way Google's search engine understands and processes natural language queries.

What is the difference between ChatGPT and generative AI?

ChatGPT is a specific type of generative AI. While generative AI broadly refers to AI systems that create new content, like text, images, or music, ChatGPT focuses specifically on generating human-like text based on the input it receives, often used for conversation, answering questions, and similar language-based tasks.

If you have other questions or need help in finding vendors, we can help:

External links

1. "Top Strategic Technology Trends for 2022" (PDF). Gartner. 2021. Retrieved November 1, 2022.
2. "Creating video from text". *OpenAI*. Accessed February 20, 2024.
3. "Review of FutureGAN: Predict future video frames using Generative Adversarial Networks(GANs)". *Medium*, 13 August 2021. Accessed March 15, 2023.
4. "Generating Synthetic Space Allocation Probability Layouts Based on Trained Conditional-GANs". *Applied Artificial Intelligence*. 33. 1-17.
5. "FAE-GAN: facial attribute editing with multi-scale attention normalization". *Machine Vision and Applications* 32, 97 (2021).
6. "SP-GAN: sphere-guided 3D shape generation and manipulation". *ACM Trans.* Graph. 40, 4, Article 151 (August 2021).
7. Walsh B.; Hamilton M.; Newby G.; Wang X.; Ruan S.; Zhao S.; He L.; Zhang S.; Dettinger E.; Freeman W. T.; Weimer M. (September 7, 2023)"Large-Scale Automatic Audiobook Creation".
8. AI Now Report: The Top 100 Usecases for Generative AI. *Filtered.* Retrieved April 18, 2024.
9. "The impact of synthetic text generation for sentiment analysis using GAN based models." *Egyptian Informatics Journal*, https://www.sciencedirect.com/science/article/pii/S1110866522000342. Accessed 27 February 2023.
10. "ChatGPT plugins." *OpenAI*, 23 March 2023, https://openai.com/blog/chatgpt-plugins#code-interpreter. Accessed 24 July 2023.
11. "AMIE: A research AI system for diagnostic medical reasoning and conversations". *Google*. January 12, 2024. Retrieved January 15, 2024.
12. "Generative adversarial networks and synthetic patient data: current challenges and future perspectives". *NCBI.* Accessed 18 December 2022.

13. “Generating User-Friendly Explanations for Loan Denials Using Generative Adversarial Networks.” *Fujitsu*, https://www.fujitsu.com/global/documents/about/resources/publications/technicalreview/2020-01/article04.pdf. Accessed 15 March 2023.
14. “Invoice Processing with IDP Generative AI“. *Youtube.* July 14, 2023, Retrieved May 12, 2024

Cem Dilmegani
Principal Analyst
Cem is the principal analyst at AIMultiple since 2017. AIMultiple informs hundreds of thousands of businesses (as per Similarweb) including 60% of Fortune 500 every month.

Cem's work has been cited by leading global publications including Business Insider, Forbes, Washington Post, global firms like Deloitte, HPE, NGOs like World Economic Forum and supranational organizations like European Commission. You can see more reputable companies and media that referenced AIMultiple.

Throughout his career, Cem served as a tech consultant, tech buyer and tech entrepreneur. He advised enterprises on their technology decisions at McKinsey & Company and Altman Solon for more than a decade. He also published a McKinsey report on digitalization.

He led technology strategy and procurement of a telco while reporting to the CEO. He has also led commercial growth of deep tech company Hypatos that reached a 7 digit annual recurring revenue and a 9 digit valuation from 0 within 2 years. Cem's work in Hypatos was covered by leading technology publications like TechCrunch and Business Insider.

Cem regularly speaks at international technology conferences. He graduated from Bogazici University as a computer engineer and holds an MBA from Columbia Business School.

Sources:
AIMultiple.com Traffic Analytics, Ranking & Audience, Similarweb.
Why Microsoft, IBM, and Google Are Ramping up Efforts on AI Ethics, Business Insider.
Microsoft invests $1 billion in OpenAI to pursue artificial intelligence that’s smarter than we are, Washington Post.
Data management barriers to AI success, Deloitte.
Empowering AI Leadership: AI C-Suite Toolkit, World Economic Forum.
Science, Research and Innovation Performance of the EU, European Commission.
Public-sector digitization: The trillion-dollar challenge, McKinsey & Company.
Hypatos gets $11.8M for a deep learning approach to document processing, TechCrunch.
We got an exclusive look at the pitch deck AI startup Hypatos used to raise $11 million, Business Insider.

To stay up-to-date on B2B tech & accelerate your enterprise:

→
Next to Read

Enterprise Automation with GenAI: 4 Principles & Best Practices
Jan 12 5 min read
10+ Generative AI Finance Use Cases in 2024
Jan 2 6 min read
Generative AI Ethics in 2024: Top 6 Concerns
Jan 2 5 min read

Comments

Your email address will not be published. All fields are required.
4 Comments

Name Surname

Email Address

Write your comment..

Ankit Bishnoi
Jan 31, 2024 at 09:34

The examples are real.

Reply

Udugula Mohan
Sep 26, 2023 at 09:29

The examples were pretty realistic.

Reply

Ishpal Chadha
Aug 25, 2023 at 01:43

This is comprehensive and useful Cem, thanks for documenting this.

Reply

Shubham
Aug 21, 2023 at 02:29

The examples were pretty realistic

Reply

Related research

Compare Top 15+ Legal AI Software: Key Features & Pricing in '24

Compare Top 15+ Legal AI Software: Key Features & Pricing in '24

Apr 23 12 min read

11 AI Use Cases in Customer Service: In-depth Guide in 2024

11 AI Use Cases in Customer Service: In-depth Guide in 2024

Mar 22 3 min read