

# Untangling

Clarifying marketing topics and terms



# Generative AI & Machine Learning

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## Untangling Terminology within Generative AI & Machine Learning

### Understanding what **Generative AI and Machine Learning** are and why they are of growing importance to marketers:

As adoption of artificial intelligence (AI) and machine learning (ML) advances throughout the advertising industry, it's important for marketers to understand these fields in order to make informed decisions on how to best leverage these emerging technologies.

AI and ML technologies can help marketers plan and buy media more efficiently, adapt their creative messaging to different customer segments and enhance user experiences. A deeper understanding of common terms for AI and ML helps lower the barriers for marketers to effectively use these technologies within their advertising campaigns.

### Key Definitions:

- **Artificial Intelligence (AI):** Machines or computers that can learn and make decisions in a human-like way through intelligence simulation. A common example would be text prediction on your cellphone.
- **Generative AI (GenAI):** A type of artificial intelligence that uses deep learning models to create new content - like text, images, video, audio or music – when prompted based on the patterns it has learned from existing data.
- **Machine Learning (ML):** The practice of teaching computers to recognize patterns through data and algorithms. Machine learning systems can be prescriptive or allow for self-learning and evolution.

### What are the differences between **Generative AI** and **Machine Learning**?

#### Generative AI

**Purpose:**

- Creates new data that resembles the data or prompts it's given

**Approach:**

- Uses multiple learning models to iterate and grow

**Applications:**

- Personalization and creative-focused

**Example Uses:**

- Drafting an email; developing a blog post

#### Machine Learning

**Purpose:**

- Understands data and makes educated predictions

**Approach:**

- Uses prescribed learning models to solve tasks

**Applications:**

- Task-oriented

**Example Uses:**

- Organizing and sorting a database

## Real-World Applications (Examples):

- **Text AI:** Tools that analyze large data sets of text to generate natural-sounding, human-like responses.
  - [Chat GPT](#) (owned and developed by OpenAI; powering Bing search engine)
  - [Bard](#) (owned and developed by Google; powering Google search engine)
  - [Write With Transformer](#)
  - [Jasper AI](#)
- **Video AI:** Tools that can generate and/or edit videos from text descriptions / prompts or visual context.
  - [Waymark](#)
  - [Descript](#)
  - [Runway](#)
  - [Wondershare Filmora](#)
- **Picture / Art AI:** Tools that can generate images based on text descriptions / prompts or visual context.
  - [Adobe Photoshop's Generative Fill](#)
  - [DALL-E](#)
  - [Midjourney](#)
  - [Stable Diffusion](#)
- **Music AI:** Tools that analyze large databases of music or pre-recorded samples to create new compositions.
  - [AIVA](#)
  - [Amper Music](#)
  - [Ecrette Music](#)
  - [Musenet](#)

## Data & Modeling Terms:

- **Algorithm:** A set of instructions or rules used by a computer or machine to solve a set of problems, execute calculations or process data.
- **Anthropomorphism:** The tendency for people to attribute humanlike qualities or characteristics to artificial intelligence or machines. For example, people may assume a chatbot is friendly because the AI is programmed to mimic human patterns.
- **Artificial General Intelligence (AGI):** Artificial intelligence that possesses human-like cognitive abilities, like the ability to learn, reason, solve problems and communicate in natural language.
  - **Related Term:** Strong AI
- **Bias:** A type of error that can occur in a large language model if its output is skewed by the model's training data. For example, a model may associate specific traits or professions with a certain race or gender, leading to inaccurate predictions and offensive responses.
- **Dataset:** A collection of raw data that can be integrated into AI and ML processes, often a document with data organized by rows and columns.
  - **Related Term:** Database

- **Emergent Behavior:** Unexpected or unintended abilities in a large language model, enabled by the model's learning patterns and rules from its training data. For example, models that are trained on programming and coding sites can write new code. Other examples include creative abilities like composing poetry, music and fictional stories.
- **Generative Adversarial Network (GAN):** Two competing neural networks trained on a set of data that learns to produce similar data, e.g., pictures of faces (examples include deepfakes, dynamic ad insertion and content creation)
- **Generative Pre-trained Transformer (GPT):** An AI/ML learning architecture used for language tasks like text generation, summarization and answering questions. It utilizes a neural network to break down and understand each word's context in a text. An example of a GPT platform is OpenAI's GPT-4, the fourth iteration of the popular tool.
  - **Related Terms:** Conversational AI, Transformer
- **Hallucination:** A phenomenon in large language models, in which the system provides an answer that is factually incorrect, irrelevant or nonsensical, because of limitations in its training data and architecture.
- **Large Language Models (LLMs):** A type of neural network that learns skills — including generating prose, conducting conversations and writing computer code — by analyzing vast amounts of text from across the internet. The basic function is to predict the next word in a sequence, but these models have surprised experts by learning new abilities.
- **Model:** A complex algorithm or layers of algorithms that interpret data and make decisions based on that data.
  - **Related Terms:** Model Drift, Inference
- **Narrow AI:** A specific type of artificial intelligence in which a learning algorithm is designed to perform a single task, and any knowledge gained from performing that task will not automatically be applied to other tasks.
  - **Related Terms:** Artificial Narrow Intelligence (ANI), Pretraining, Weak AI
- **Natural Language Processing (NLP):** Techniques used by large language models to understand and generate human language, including text classification and sentiment analysis. These methods often use a combination of machine learning algorithms, statistical models and linguistic rules.
  - **Related Terms:** Natural Language Generation (NLG) / Natural Language Understanding (NLU)
- **Neural Network:** A mathematical system, modeled on the human brain, that learns skills by finding statistical patterns in data. It consists of layers of artificial neurons: the first layer receives the input data, and the last layer outputs the results. Even the experts who create neural networks don't always understand what happens in between.
  - **Related Term:** Artificial Neural Network (ANN)
- **Parameter:** Numerical values that define a large language model's structure and behavior, like clues that help it guess what words come next. Systems like GPT-4 are thought to have hundreds of billions of parameters.
  - **Related Terms:** Dimensions, Hyperparameter

- **Prompt:** An input that provides context for generative AI, which can be instructions, statements or even a block of code. Similar to how you may prompt a person as a starting point for writing an essay, you can use prompts to teach an AI model to produce the desired results when given a specific task.
  - **Related Term:** Prompt Engineering
- **Transformers:** A neural network architecture useful for understanding language that does not have to analyze words one at a time but can look at an entire sentence at once. This was an AI breakthrough, because it enabled models to understand context and long-term dependencies in language. Transformers use a technique called self-attention, which allows the model to focus on the particular words that are important in understanding the meaning of a sentence.
  - **Related Term:** Transformer Model

## How are marketers, agencies and publishers using AI & ML?

### Brand Marketers

[Click here](#) to see how brands like **Amazon, Starbucks, Alibaba, Nike** and **BMW** are using AI & machine learning to **analyze data, personalize experiences, drive recommendations and optimize sales**.

### Media Agencies

[Click here](#) to see how media agencies like **Havas** and **Horizon Media** are using AI to **optimize their media buys, evolve their creative approaches and boost ecommerce sales**.

### Media Publishers

[Click here](#) to see how **Univision's partnership with Mirriad's** AI-powered in-content platform allows brands to engage with viewers, **particularly multicultural audiences**, directly in scenes.

## AI / Machine Learning Models:

- **Deep Learning:** A neural network whose data passes through several layers of processing before generating a response.
  - **Related Terms:** Learning to Learn, Meta Learning
- **Inverse Reinforcement Learning:** A learning technique that can take a set of human-generated training data and compile an approximation of the goal that the human is looking for.
- **Reinforcement Learning:** A model that teaches an AI model to find the best result by trial and error, receiving rewards or punishments from an algorithm based on its results. This system can be enhanced by humans giving feedback on its performance, in the form of ratings, corrections and suggestions.
  - **Related Terms:** Temporal-Difference Learning, Transfer Learning
- **Supervised Learning:** Learning based on the input of clearly labeled data and aimed at training algorithms developed by humans to recognize patterns and accurately label new data.
- **Unsupervised Learning:** Learning style created through algorithms that analyze and cluster unlabeled datasets without human intervention. These algorithms discover hidden patterns or data groupings without the need for human intervention.

## What do marketers see as initial opportunities and concerns in AI & ML?

Almost half (47%) of U.S. adults agree that AI should replace different types of work tasks in order to **increase efficiency and productivity**.<sup>1</sup> There are opportunities within marketing to apply AI and ML such as in campaign development, execution and management.

As AI becomes more accepted and integrated throughout the workforce, marketers are most concerned about:

- **Irresponsible AI usage** (72%)<sup>2</sup>
- **Reduced employment opportunities** (71%)<sup>2</sup>
- **Increased spread of misinformation** (64%)<sup>2</sup>

Currently there are **no U.S. national laws set in place to regulate AI** amidst concerns about cyber-security, employment and disclosures of AI in marketing. **Some states have enacted their own data privacy laws** regarding how marketers use AI as it relates to individual consumers' personal data.

## What are the 3 things to know about generative AI & machine learning?

1. Business integration of AI is growing, with **50%** of businesses and organizations having adopted AI in at least one function.<sup>2</sup> In the marketing industry, **65%** of marketers and customer experience professionals are investing in marketing analytics, AI and machine learning to address the digital customer journey.<sup>3</sup>
2. Adoption of AI in TV and film production is growing as it becomes more integrated into writing, storyboarding, directing, visual effects and editing.<sup>4</sup> The Writers Guild of America, Directors Guild of America and the Screen Actors Guild have all pushed for tighter regulations and approvals for the use of AI that could replace or augment human writers, directors and actors.
3. The ANA has revised its [standard media agency contracts](#) to include transparency when it comes to AI, stating that agencies shall disclose the use of and gain permission from advertisers when using AI, which will have implications across media platforms, especially digital advertising.<sup>5</sup>

## Industry Perspectives:

1. **"AI provides speed, accuracy and efficiency, freeing up human capital to focus on things such as strategy and creative production... With growing AVOD, FAST and live streaming ad opportunities, the ability to forecast avails more accurately to optimize CPMs in real-time based on those forecasts will enable improved monetization. Combining AI with streamlined offerings can further maximize value, driving cost efficiencies as well as profitability."** - Joe Hirsch, Magnite's SVP, Innovation & Special Projects<sup>6</sup>
2. **"We're testing [AI]... We are doing a lot of testing in ways that help us be able to meet our consumer goal. As we talk about the acceleration of content creation, we have to think about what the power of generative AI can be to get us there faster."** – Han Wen, L'Oréal's Chief Digital and Marketing Officer<sup>7</sup>
3. **"At Havas Media Group, we want to move to a place in the next 2-3 years where we are applying AI in our agency to optimize all media buys, to create custom algorithms within a bidder, to identify the right training modules for a planner, make manual tasks like filling out our timesheets far more automated, and much more."** - Mike Bregman, Havas Media Group's Chief Data Officer<sup>8</sup>

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## Future Outlook:

AI adoption is on the rise as consumers are **increasingly incorporating it into their daily tasks and media interactions**. With investment in AI expected to reach **\$98.1 billion by 2026**,<sup>9</sup> the use of AI-based marketing technology is anticipated to create new jobs, according to **46% of businesses**.<sup>10</sup>

From an advertising perspective, GroupM predicts generative **AI will inform a minimum of half of all ad revenue**, including both media optimization and ad creative, by the end of 2023 and **more than two-thirds of advertising by 2028**,<sup>11</sup> signaling a major shift in advertising practices.

Furthermore, **90% of digital ad campaigns are predicted to be influenced by AI** by 2027<sup>8</sup> with generative AI poised to significantly disrupt the largest digital ad format – the nearly **\$100 billion search engine ad marketplace**<sup>12</sup> – with the introduction of conversational search which may alter the way consumers look for new products and services. As of now, two of the biggest players, Google and Bing, have recently incorporated generative AI capabilities into their platforms to **improve search processes** by delivering more relevant and personalized search results to consumers.<sup>13</sup> This will likely help marketers **recognize patterns in customer and market data** to better target relevant consumers.<sup>14</sup>

However, consumer concerns about personal data privacy are leading to a potential **increase in government regulation**, as about **three-fourths of US adults express worries about AI's impact on their privacy**.<sup>15</sup> As marketers wait for impending regulations over AI, **brands can establish their own standards for how to approach AI usage**. For example, brands can limit their usage internally, review AI outputs for inaccuracies, hold AI partners accountable through open communication and uphold transparency with their consumers.

**By staying informed and implementing best practices, marketers can more skillfully navigate this emerging technology in the years ahead.**

## Assisted by Generative AI, Refined by Humans

*(Note: Generative AI, specifically OpenAI's GPT-4, was used to aid in the development of some sections in this 'Untangling' piece)*

## Looking for more industry terminology?

Click on the images below to download

VAB's [advertising glossaries](#) cover topics like **web3 / metaverse / blockchain / NFTs, video measurement, data / identity / privacy, audience-based buying, TV ecosystem and streaming**.

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Untangling Terminology Within Web3, Metaverse, Blockchain & NFT

Why do we need to simplify common 'Web3, metaverse, blockchain and NFT' terminology?  
The beginnings of the next iteration of the internet have begun to take shape as the relevant infrastructure continues to be built out. Web3 is based on blockchain technology which incorporates concepts such as decentralization, token-based economics, artificial intelligence, machine learning and the creation of immersive, interoperable virtual worlds.

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Untangling Terminology Within Video Measurement

Why do we need to simplify common video measurement terminology?  
Fueled by rapid audience fragmentation, video measurement has evolved into a complex ecosystem of devices, platforms, tools and services. Accurately capturing today's cross-screen audiences is a top priority for marketers, with the industry coming together in an all-hands-on-deck effort to develop and implement modern forms of media measurement.  
To help you navigate the ever-growing marketplace of platforms, sources, data providers and methodologies, we have created a comprehensive glossary of frequently used terms.

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Untangling Terminology Within Data, Identity & Privacy

Why do we need to simplify common 'data, identity & privacy' terminology?  
Due to the many challenges that the advertising industry is facing today – measurement for modern times, the deprecation of third-party cookies, increased desire for consumer privacy – data, in all its forms, has become one of the most heavily discussed topics in marketing. Therefore, as marketers, it's important to understand the related verbiage and terminology being used in the industry as you navigate through the complex ecosystem that includes a multitude of data sources, targeting approaches, platforms, solutions and regulations.  
Below, we seek to simplify the frequently used terms and provide a comprehensive glossary.

What Is...  
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What is Audience-Based Buying?

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What is TV?  
A Modern Look At How Consumers Define TV

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Untangling Terminology Within Streaming

Why do we need to simplify common 'video streaming' terminology?  
Video streaming in its most basic form refers to any video content that is delivered to a video device via the Internet through a variety of access points. However, below the surface there is a constantly evolving ecosystem of devices, services, content, technology and terminology that can easily confuse or overload anyone. As marketers, it is important to understand the most used vernacular and related terminology as they navigate this complex space.  
Below, we seek to simplify the frequently used terms and provide a comprehensive glossary.

## About VAB

VAB is an insights-driven organization that inspires marketers to reimagine their media strategies resulting in fully informed decisions.

Drawing on our marketing expertise, we **simplify** the complexities in our industry and **discover** new insights that **transform** the way marketers look at their media strategy.

We are committed to your business growth and proud to offer VAB members, brand marketers and agencies **complimentary access** to our continuously-growing Insights library.

**Get immediate access at [theVAB.com](https://theVAB.com).**

## Sources

1. eMarketer, *ChatGPT and Generative AI in Media and Advertising*, March 2023. Data sourced from *Ipsos Coronavirus Consumer Tracker, Jan 23, 2023; respondents who answered 'strongly agree' or 'somewhat agree'*.
2. QuantumBlack, AI by McKinsey, *The State of AI in 2022*, December 2022.
3. CMO Council via eMarketer, *Cracking Tomorrow's CK Code*, 12/8/2022.
4. Yahoo, *Lights, Camera, Unemployment: How AI May Change Film and TV Production Work*, 5/26/2023.
5. MediaPost, *ANA Revises Media Agency Contracts, Requires Prior Client Consent For Using AI*, 6/6/2023.
6. TVREV, *Hot Takes: How Will AI Affect The Television Industry?*, 5/30/2023.
7. Digiday, *Marketing Briefing: Coca-Cola and other major marketers enter 'test and learn' phase with generative AI*, 3/28/2023.
8. Digiday, *Google, Meta and large media agencies Havas, Horizon are increasingly focused on, and investing in, AI-powered advertising*, 2/6/2023.
9. Pitchbook via Variety VIP+, *How Generative AI Defied the Venture Capital Crunch*, 5/18/2023.
10. Unbounce, *State of AI Marketing Report, 2023*.
11. GroupM, *Mid-Year Ad Forecast – 2023*.
12. eMarketer, *US Search Ad Spending 2022*, 9/12/2022.
13. Forbes, *How AI Will Revolutionize the Future of SEO*, 4/19/2023.
14. McKinsey, *AI-powered marketing and sales reach new heights with generative AI*, 5/11/2023.
15. Morning Consult via Variety VIP+, *Generative AI & Entertainment*, April 2023.

## Definition Sources (reference pieces used in the development of several definitions)

- The New York Times, *Artificial Intelligence Glossary: Neural Networks and Other Terms Explained*, 3/27/2023.
- The Drum, *The essential AI glossary for marketers*, 5/25/2023.
- Google, *The Machine Learning Glossary*, 5/1/2023.
- LinkedIn, *Navigating the World of Generative AI: A Guide to Essential Terminology* by Gary Stafford, 4/6/2023.
- GroupM, *The Next 10: Artificial Intelligence*, April 2022.