# Could you provide us with a definition of GenAI?  What is it and what does it do?

Generative AI refers to a category of artificial intelligence techniques and models that are designed to generate new content or data that is like, or even indistinguishable from, human-created content.

This type of AI system uses machine learning algorithms to produce original content, such as text, images, audio, and more. So, while most people focus on language and text generation, it is broader than that.

ChatGPT was released by OpenAI on November 30, 2022, and almost at once burst into our collective consciousness. Social media was awash with engaging examples of things it could do. The legal industry took note. In less than a year, just keeping track of all the Gen AI focused announcements and new offerings in the legal space has become a cottage industry.

Could we have anticipated ChatGPT and Gen AI? Perhaps. It did not strike like a lightning bolt out of the blue. I want to provide a bit of background.

The start of natural language processing goes back to the 1950s with incremental progress made over time. Notwithstanding the evolution of the field, arguably the single most important advance came in 2017 when Vaswani and colleagues published “Attention is All You Need” a paper that introduced the Transformer architecture and revolutionized the field. A discussion of the Transformer architecture is beyond the scope of this webinar but suffice it to say that it forms the foundation of most of the subsequent breakthroughs, including the current Gen AI models.

The Transformer architecture captures relationships between words in a sequence and handles long range dependencies. It is the key that allows us to build systems that capture concepts instead of focusing on isolated words. The next big step is the ability to generate text. (That’s the G in GPT. The P is for pre-trained. The T is for Transformer.) Generative models built on Transformer architectures use the relevant concepts to produce fluent text. Before the current collection of models, it was typical to build task-specific models. Today’s generative large language models are very flexible and can handle a dazzling array of language tasks.

Generative AI is especially well-suited for natural language processing (NLP) tasks where generating novel and contextually appropriate text is required. Some examples of such tasks include:

* Text generation: Generative AI models can be used to generate novel text in a wide range of styles and formats, including creative writing, poetry, and news articles.
* Chatbots and conversational agents: Generative AI models can be used to develop chatbots and conversational agents that can carry out natural, human-like conversations with users, providing customer service or answering questions.
* Summarization: Generative AI models can be used to automatically summarize long pieces of text into shorter, more concise versions, such as news articles or research papers.
* Machine translation: Generative AI models can be used to translate text from one language to another, generating contextually appropriate translations that capture the nuances and subtleties of each language.
* Storytelling and narrative generation: Generative AI models can be used to create dynamic and interactive stories and narratives, allowing users to interact with and shape the story as it unfolds.

Overall, generative AI is especially well-suited for NLP tasks where generating novel and contextually appropriate text is essential, and where the ability to understand and produce natural language is

critical.

While generative AI models are well-suited for many natural language processing (NLP) tasks, there are certain tasks where they may not be the best choice. Here are some examples of tasks where other NLP techniques may be better alternatives:

* Text classification: In text classification tasks, such as sentiment analysis or spam detection, the goal is to classify a given piece of text into one or more predefined categories. For such tasks, supervised learning algorithms, such as support vector machines (SVMs) or decision trees, may be more appropriate as they can learn to classify text based on labeled training data.
* Named entity recognition (NER): NER is the task of identifying and classifying named entities, such as people, organizations, and locations, in a given piece of text. Rule-based or conditional random field (CRF) models may be more appropriate for this task, as they can be trained to recognize specific patterns and sequences of words that correspond to named entities.
* Part-of-speech (POS) tagging: POS tagging is the task of assigning a part of speech, such as noun, verb, or adjective, to each word in a given piece of text. Statistical models, such as hidden Markov models (HMMs) or maximum entropy models (MaxEnt), may be more appropriate for this task, as they can be trained on large annotated datasets to learn the distribution of words and their associated part-of-speech tags.
* Information extraction: Information extraction involves identifying and extracting specific pieces of information from unstructured text, such as dates, locations, and phone numbers. For this task, rule-based systems or named entity recognition models may be more appropriate, as they can be trained to recognize specific patterns and sequences of words that correspond to the desired information.

Overall, generative AI models may not be the best choice for NLP tasks where the goal is to classify or extract specific pieces of information from text, as these tasks often require a more structured approach that relies on predefined rules or labeled training data.

# I understand you teach and do consulting work around AI. What types of questions do you receive about GenAI and implementing it and/or project specific work.  What advice are you providing.

Do we need our own model? Probably not.

Can it generate [x] from scratch? Probably not (not yet).

Doesn’t it get updated all the time? Nope.

Do we need to organize and clean our data anymore? Yes.

I tell people that these tools are best viewed as powerful ways to help people good at a task be even better. It will not turn a novice into an expert. It will make an expert much more efficient.

People assume that the latest technology is the thing they need to use. That’s not necessarily so. I am fond of saying that sometimes you need a hammer AND a screwdriver. We should look for way to extend what we have.