

Original thinking. Humans vs AI.

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Abstract

AI research provides numerous examples of AI systems capable of performing tasks such as image recognition, natural language processing, and even the generation of new images, text, and music; however, these abilities are based on the patterns and predictions present in the data that the AI system was trained on.

This shows that even the most powerful AI systems are impacted by the facts and patterns they have been exposed to, rather than being completely unique in their reasoning. In this post, I will argue that humans, like AI, are more likely to be inspired by and expand on existing ideas and concepts than to generate completely original ones.

It is crucial to remember that various people may understand the term

"originality" differently. While some people believe that an idea is only unique if it is wholly fresh and has never been conceived of before, others believe that an idea is original if it is a novel combination or reinterpretation of previous concepts.

Also, I argue that the goal should be to create entities that complete a task in an optimal way, regardless of how they do it.

In this work, I examine the term of "originality" in its most common interpretation, which implies that original thoughts are only those that are wholly fresh and have never been conceived of before.

Keywords: artificial intelligence, originality, original ideas, original thinking

Defining "original ideas."

The concept of an "original thought" varies according to context and topic of study. In general, an original concept is anything fresh and distinctive that has not previously been conceived of or found. However, various disciplines may have diverse definitions of what defines an original concept.

In science, for example, an "original concept" is sometimes defined as a hypothesis or theory that has been extensively examined and backed by empirical data. In the world of art and literature, an "original concept" is a work that is distinctive and conveys the artist's personal point of view or vision.

In some domains, an idea is considered original if it is novel and has not previously been explored. In other domains, a fresh combination or reinterpretation of previous concepts is deemed innovative.

It's also worth noting that the concept of originality may be subjective, and what one person thinks to be an original thought may not be considered by another. Furthermore, the definition of uniqueness might have a alter depending on culture, historical period, and circumstance.

As a result, depending on the topic of study and the situation, the meaning of an original concept might vary. In general, an original concept is anything fresh and unique that has not previously been conceived of or found; however, this definition varies by area and is influenced by many criteria and viewpoints.

Original thinking

Human exceptionalism has long held that humans are endowed with unique thoughts and ideas. Recent research in cognitive science, neurology, and artificial intelligence (AI) reveals that this view is incorrect. In this paper, I propose that humans, like AI, are mostly inspired by and build on existing ideas and concepts rather than developing really unique ones, or that such occurrences are so rare as to be negligible.

Human memory research provides important evidence for this idea. According to that research, human memories are not flawless recollections of previous events, but rather are made up of disparate fragments of information that are stitched together to produce a cohesive story. Because of this reconstruction process, our memories are not precise replicas of previous

events, but are modified by our current knowledge, beliefs, and prejudices.

Another important piece of evidence comes from studies on the neural networks of the brain. According to research, these networks are structured into modules that specialize in various forms of information processing, including vision, language, and emotion. According to this modular structure, the brain is not a general-purpose information processing computer, but rather a collection of several specialized systems that collaborate to generate behavior.

AI research supports humans not being original thinkers

AI research also supports the notion that humans lack creative ideas. Many AI systems, for example, are built on neural networks, which are fashioned after the organization of the brain's neural networks. These systems learn to find patterns in enormous volumes of data and generate predictions based on those patterns. However, the patterns recognized by the AI system, and the predictions it makes are not necessarily novel, but rather are dependent on the patterns and predictions existing in the data on which it was trained.

One example is deep learning neural networks, which are trained on massive

quantities of data and employ complicated mathematical operations to spot patterns and make predictions. These algorithms are capable of picture identification, natural language processing, and even the generation of new images, texts, and music. However, the patterns and predictions made by these algorithms are not original; rather, they are based on patterns and predictions found in the data that the AI system was trained on.

Another example is the employment of artificial intelligence in creative disciplines such as music and painting. AI systems that can compose music, create art, and even write poetry have been developed. These AI-generated compositions and artworks, however, are not unique and are based on patterns and styles discovered in the data that the AI system was trained on.

Furthermore, AI systems capable of generating human-like language, such as Generative Pre-trained Transformer (GPT) models, have been trained on huge amounts of text data, and as a consequence, they can create text that is often indistinguishable from text written by people. This generated content, however, is not unique; rather, it is based on linguistic patterns and styles discovered in the data that the AI system was trained on.

This implies that humans, like AI, are more likely to be inspired by and expand

on existing ideas and concepts than to generate completely original ones. While this may appear to lessen the uniqueness of human intellect, it is vital to note that the capacity to build on and improve upon previous ideas is an important part of intelligence and a driving force behind human advancement.

Humans like AI can not generate original ideas

AI systems are restricted in their ability to develop really unique ideas since they are reliant on patterns and predictions discovered in the data they are trained on. However, research in cognitive science and neuroscience reveals that while forming new ideas and concepts, the human mind is also impacted by previous experiences and knowledge.

The notion of "conceptual blending," for example, proposes that new ideas are produced by merging and rearranging old concepts in innovative ways. According to this theory, people have a limited number of core concepts through which they interpret the world, and new ideas are produced by mixing and rearranging these basic notions.

Furthermore, neuroscience research has revealed that the brain's neural networks are structured into modules that specialize in particular forms of information processing. According to

this modular structure, the brain is not a general-purpose information processing computer, but rather a collection of several specialized systems that collaborate to generate behavior. This hypothesis also suggests that human brains build on prior knowledge and patterns.

While AI systems are currently restricted in their ability to develop completely unique ideas, research in cognitive science and neuroscience reveals that while producing new ideas and concepts, the human mind is also impacted by previous experiences and knowledge.

Origin of original thinking

The genesis of original ideas is a complicated matter that has sparked considerable debate and discussion in domains such as philosophy, psychology, and neuroscience.

According to one hypothesis, original ideas are the consequence of chance or random processes. In the realm of evolutionary biology, for example, it is claimed that new species and genetic variants might emerge through random mutations. Similarly, scholars in the realm of neuroscience have argued that the spontaneous firing of neurons in the brain might generate unique thoughts and ideas.

Another hypothesis holds that new ideas emerge through the combining and recombination of existing ones. This is known as the "conceptual blending" theory, which proposes that new ideas are produced by merging and rearranging old concepts in innovative ways.

A third theory says that people come up with new ideas when they know a lot about a subject.

According to this notion, really unique ideas are the result of years of serious study and investigation, and they are only conceivable when an individual has a complete comprehension of the present level of knowledge in a certain subject.

To summarize, the origins of original ideas are a complicated and diverse issue that is still being researched and disputed by scholars from numerous professions. It is vital to remember that different ideas and viewpoints may result in varied interpretations of the concept of originality.

AI and original ideas

Based on the present state of AI research and development, AI systems are unlikely to be able to produce really unique ideas. As I previously stated, most AI systems are based on patterns and predictions discovered in the data on which they are trained, and hence their thoughts and conceptions are not

genuinely unique, but rather drawn from the patterns existing in the data.

However, research is underway to construct AI systems capable of generating novel ideas. Some academics are focused on constructing AI systems that can learn from their experiences in the same way that people do in order to produce new ideas. Other academics are focusing on AI systems that can produce new ideas by using imagination and creativity.

It's worth noting that the concept of creativity in AI is similarly tricky. According to some academics, AI may be deemed to have unique ideas as long as it generates something new and valuable, even if it is not fully novel and has never been considered before.

Randomness on ideation

AI systems are capable of generating ideas through chance or random processes. Some academics have advocated using random processes in the creation of AI systems, such as random mutations or random neural network weight initializations, to create fresh and possibly creative ideas.

Researchers, for example, have advocated using evolutionary algorithms to teach AI systems. These algorithms develop new varieties of a given AI system via random mutations, and then choose the best variation depending on

some criteria. This technique has the ability to generate novel and perhaps creative ideas.

Another case in point is the use of neural networks with random weight initializations. This approach employs several random starting weight values for the neurons in a neural network before training the network with the same data set. The end result might be a model that generalizes effectively, and alternative weight initializations could lead to different solutions that could be deemed novel concepts.

It is important to note, however, that these ideas formed by chance or random processes are not always unique in the sense that they are wholly new and have never been conceived of before, but rather novel combinations or variants of existing concepts. Furthermore, while randomness can be used to investigate a wide range of possibilities, it does not ensure that it will result in something genuinely innovative or beneficial.

Likelihood for humans or AI producing originality

Based on existing study and knowledge, AI systems are unlikely to be able to produce really unique ideas as easily as humans do. While AI systems may be trained to spot patterns and make predictions based on data, their capacity to grasp the context and meaning of the

data remains restricted. Humans, on the other hand, have the ability to combine apparently unconnected thoughts and concepts, allowing them to produce really novel ideas.

Furthermore, as previously noted, the concept of originality is a complicated one that may be understood differently by various individuals, and the idea that AI can generate unique ideas is still a point of contention among academics.

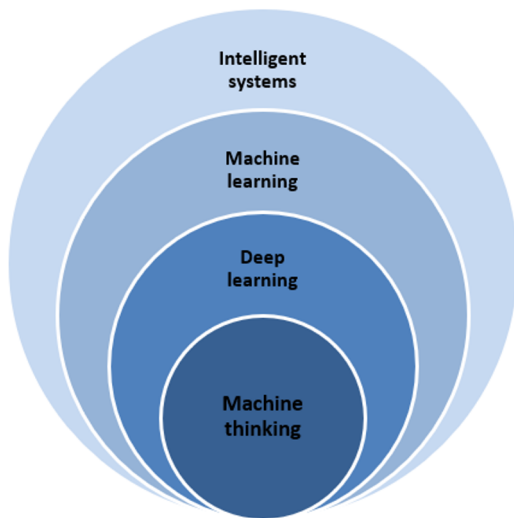
However, AI systems can still be used to generate new ideas by employing techniques such as evolutionary algorithms, which use random mutations to generate new variations of a given AI system and select the best variation based on some criteria, or by employing random weight initializations in neural networks, which allows the network to explore a large space of possibilities.

It's also worth mentioning that AI systems may help humans with their creative processes by bringing fresh views and insights, as well as automating jobs that would be time-consuming for humans to complete, allowing humans to focus on more creative elements of their work.

To summarize, while AI systems are currently limited in their ability to produce really unique ideas, they can nevertheless be effective in the development of new ideas and can aid

people in the creative process. Furthermore, the concept of Originality is difficult, and the idea that AI may generate unique ideas is currently being debated among researchers.

AGI and original ideas



AGI (Artificial General Intelligence) is an artificial intelligence (AI) system that can accomplish any intellectual work that a person can. Unlike present AI systems, which are specialized in a certain job or area, AGI systems are designed to have general intelligence that can be applied to a wide range of activities.

AGI is still a research issue, and there is continuous discussion among researchers concerning the feasibility and ramifications of developing AGI. Some academics believe that AGI systems can develop really unique ideas, while others argue that AGI systems will

always be restricted in their ability to grasp the context and meaning of data.

One method for creating AGI that has been advocated is to try to imitate the human mind, which would include the capacity to develop creative ideas. Some academics are focused on constructing AGI systems that can learn from their experiences in the same way that humans do in order to produce new ideas. Other academics are focused on constructing AGI systems that can produce new ideas using imagination and creativity.

It is crucial to highlight, however, that the creation of AGI is a complicated and difficult process, and it is yet uncertain when or if it will be feasible to construct AGI systems that can generate really unique ideas in the same way that humans can.

In my opinion, it is not a question of "if," but more a question of "when."

An original ideas generation machine

It is conceivable to create an AI model that can generate unique and original ideas, but it would be a quite difficult task to fulfill. Developing an AI model that can actually produce original ideas would need a thorough grasp of the human creative process as well as the capacity to mimic it in an AI system.

Researchers have proposed many ways for developing specialized AI models for producing novel ideas:

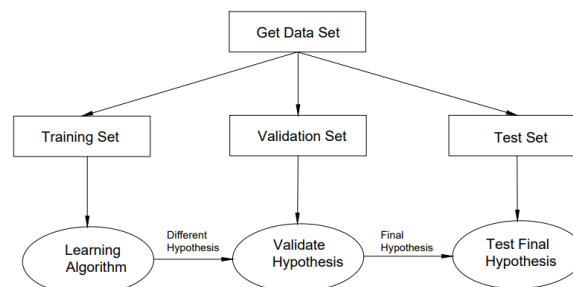
- Evolutionary algorithms: Researchers have proposed training AI models with evolutionary algorithms to create novel concepts. These algorithms build new versions of a given AI model via random mutations, and then choose the best variation depending on some criterion. This technique has the ability to generate novel and perhaps creative ideas.

- Neural networks with random weight initializations: To produce novel ideas, researchers have advocated utilizing neural networks with random weight initializations. This approach employs several random starting weight values for the neurons in a neural network before training the network with the same data set. The end result might be a model that generalizes well, and the alternative weight initializations could lead to distinct solutions that could be deemed novel concepts.

- Generative models: Researchers have advocated employing generative models such as GANs or VAEs to develop AI models capable of generating novel ideas. By studying the underlying probability distribution of the data, these models are trained to generate new and potentially creative ideas.

Data and training as the source

AI models are, to some extent, heavily dependent on the data on which they are trained, and their capacity to develop new and possibly creative ideas is restricted by the diversity and quality of that data. Similarly, the information and experiences that humans are exposed to impact them, and their ability to develop new and possibly unique ideas is likewise restricted by the diversity and quality of the information and experiences that they are exposed to.



However, there is a significant difference between AI models and humans in how they interpret and use data. Humans can absorb new information and integrate it with their current knowledge and experiences to develop new and possibly creative ideas, whereas AI models are often trained on a certain collection of data and then used to make predictions based on that data. Humans' capacity to integrate new information with previous knowledge is referred to as "conceptual blending" or "cognitive niche building" (described

above), and it allows them to produce new and possibly creative thoughts that are not constrained by the facts on which they were taught.

Furthermore, humans have a high level of creativity, intuition, and common sense, which allows them to produce fresh and possibly original ideas that AI models cannot fully mimic. While AI models may learn from data, they lack the creativity and insight that people have.

To summarize, while both AI models and humans are impacted by the data they are exposed to, there are significant distinctions in how they interpret and utilize that material, affecting their capacity to develop new and possibly creative ideas.

Replicating "conceptual blending" or "cognitive niche construction" concepts for AI

"Conceptual blending" and "cognitive niche construction" are cognitive processes related to human creativity that refer to humans' ability to integrate numerous concepts, ideas, or experiences to develop new and possibly creative ideas.

While cognitive scientists and computer scientists are currently researching these notions, there have been some efforts to

recreate these concepts in AI models. Researchers are focused on constructing AI models that can learn from their experiences in the same way that people do in order to produce new ideas.

Some researchers have suggested employing neural networks to imitate the human mind, which would entail cognitive niche building and conceptual mixing. These models are taught to learn from their experiences and to come up with new ideas by mixing several concepts and/or thoughts.

Other researchers have advocated employing evolutionary algorithms or generative models to mimic people' ability to develop fresh and possibly unique ideas. To produce fresh and possibly novel ideas, these approaches employ random mutations and exploration of the universe of possibilities.

Conclusion and outcomes

It is reasonable to suppose that AI systems are already capable of or will soon be able to duplicate originality in ideation in an exponential fashion. This is the case if originality in ideation is predominantly obtained from random events and/or past experiences. In spite of the fact that we do not completely understand how this process works, it is now abundantly obvious that humans are more capable of coming up with creative ideas than any other species.

On the other hand, it is essential to take into consideration how uncommon the development of fresh ideas is. According to the findings of study, unique concepts as an end result are exceedingly rare; therefore, it may make sense to reject their existence in their entirety. As mankind progresses, there will be a significant decrease in the originality of thoughts since the vast majority of things will have previously been represented in some way or another.

In addition, demonstrating the uniqueness of a concept is notoriously difficult in the first place.

The more we discover about and decipher the workings of the human brain, the better we will be able to reproduce those processes in AI systems.

It is essential to keep in mind, however, that a highly developed AI system, sometimes known as an AGI, could be able to produce unique thoughts in novel ways that we are unable to or will not attempt to grasp. In the long run, I would suggest that it is not feasible to compare the manner in which AI "thinks" with that of humans. This is due to the possibility that AI generates uniqueness in ways that we do not completely understand.

AI models are taught how to play chess by learning from their previous moves,

just like a person would learn to play by making mistakes and then correcting them. I have to question whether the focus of research shouldn't instead be on how to construct models that finish a job in the best and most optimum way rather than on whether or not the model imitates human reasoning in order to finish the assignment.

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