

234. COMPUTATIONAL CREATIVITY VS HUMAN INTUITION: A COMPARATIVE ANALYSIS OF GENERATIVE MECHANISMS

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In this paper, the nature and limits of creativity in artificial intelligence in comparison to human thinking are examined. Data from psychological tests and language structures is analyzed to determine whether AI models are capable of creating something truly new. AI is seen more as a tool to help people think, rather than as an independent creator.

The rapid growth of AI and large language models (LLMs) has changed how people think about creativity and authorship. Historically, creating something new and valuable was seen as a purely human ability. However, modern AI systems can now pass tests in creative thinking and writing. This situation requires a serious look at what real creativity actually is. There is a big difference between how the human brain works and how AI is built. Human creativity comes from a mix of brain activity, physical experience, and emotions. In contrast, AI relies on math and statistics. It is argued that while AI is very good at mixing existing ideas, it cannot perform “transformational” creativity because it does not have its own goals or feelings [1].

To study machine creativity, it is helpful to consider the following three types: combining old ideas, exploring existing rules, and changing the rules entirely. AI is very good at the first two types because it is trained on huge amounts of data. This is often called “synthetic creativity”. However, the highest level of creativity requires changing the basic rules of a field. AI struggles with this because its answers are always based on the data it was trained on. AI does not have its own motivation and cannot choose to break rules to invent something completely different.

In the field of computational creativity, scholars often evaluate AI systems based on the standard definition of creativity: the ability to produce work that is both novel and useful. This perspective suggests that for an idea to be truly creative, it must deviate from previous patterns while remaining socially or functionally valuable. Many researchers also refer to the “Creative Turing Test”, which explores whether a human evaluator can distinguish between a work produced by a machine and one created by a human artist. These concepts are central to the debate over whether generative models are truly creative or merely advanced algorithms that rearrange existing human knowledge through statistical prediction.

These ideas are supported by large studies of creative thinking. In a study with 100,000 people, AI models scored higher than the average person in coming up with unusual ideas. But even the best AI could not beat the top 50 % of human participants. The most creative people (the top 10 %) still perform much better than any AI [2]. Also, AI does not have the physical senses that humans use to judge what is beautiful or meaningful.

From a language point of view, humans and AI are very different. Humans use a natural inner structure to create endless meanings. AI models just recognize patterns in data. They copy the way we talk without really understanding the world or thinking about “what if” scenarios. Even if AI does not “understand” what it writes, its words still have meaning for people because they use language that has been part of our society for a long time. So, while the machine does not feel anything, its work is still useful to us [3].

In the world of art, AI-generated images are often seen as different from human art because the person using AI does not have full control over every detail. Looking at works of art created by AI is more like looking at a beautiful sunset than listening to a person trying to tell you something specific.

In conclusion, if creativity is just about mixing styles and ideas quickly, AI has already beaten the average human. But if true creativity requires deep feelings, life experience, and the will to rebel against old rules, AI is still limited. Instead of seeing AI as a replacement, it should be seen as a powerful tool. In this partnership, AI does the hard work of sorting through data, while the human provides the soul and the new direction.

References:

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