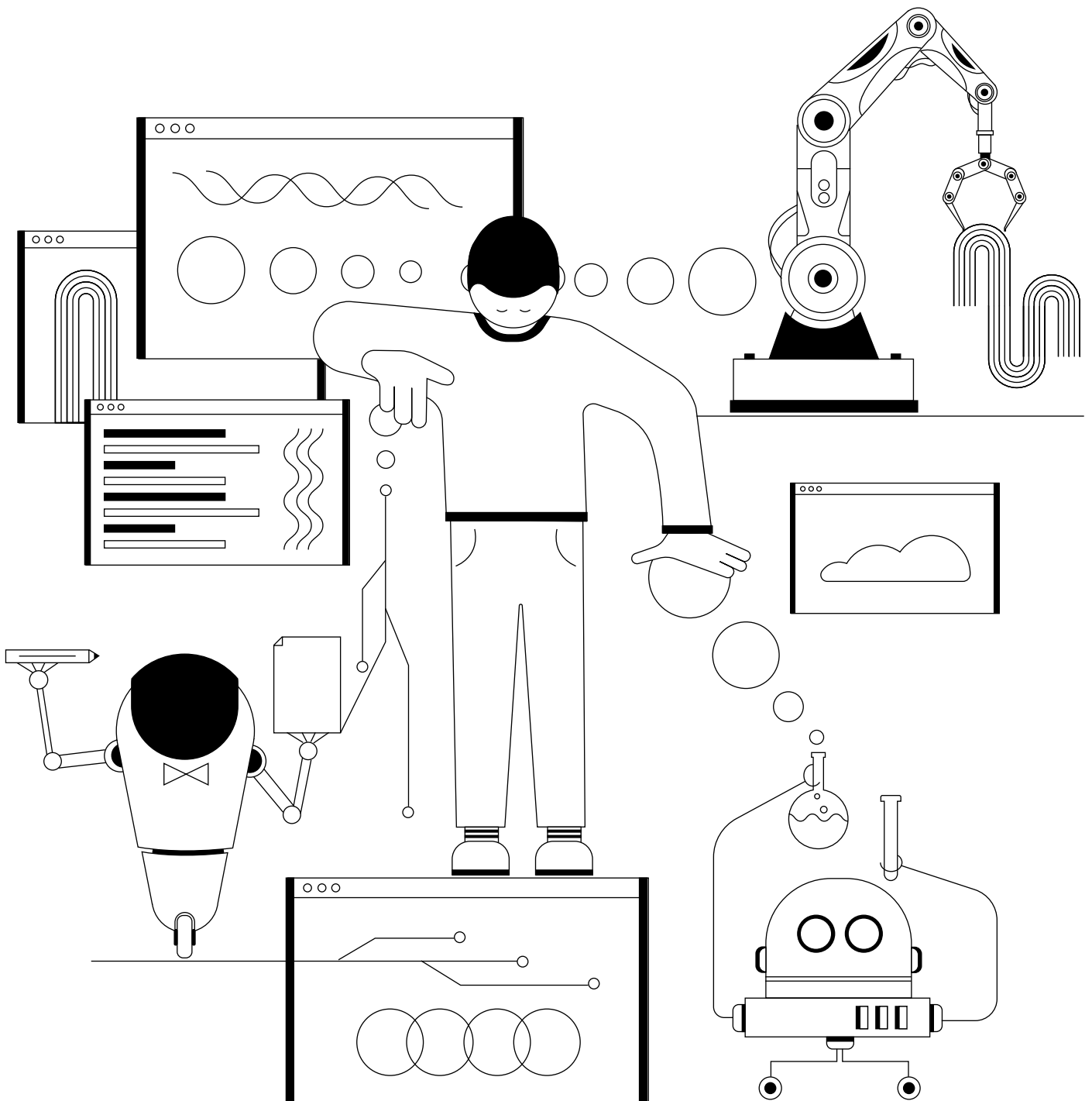


# CREATIVE THROUGH AI

How artificial intelligence can support  
the development of new ideas

*By Jan Bieser*



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# Summary

Studies show that less innovative and groundbreaking ideas have been proposed, despite increased research spending. The great hope for reaccelerating the pace of innovation lies in artificial intelligence (AI). Many of today's experts agree that AI will not develop fundamentally new ideas on its own; however, there are ways in which AI can support humans in doing so, as AI can augment human creativity.

Foremost among AI's many capabilities for augmenting human creativity is its ability to relieve us of monotonous tasks, such as searching for information and allowing more time for stimulating activities that can lead to new ideas. AI can also take over more creative tasks by identifying patterns in data that humans would not have found. In this case, AI does not just take over tasks that would be time-consuming; it might provide insights humans would have never found themselves. Generative AI can even create entirely new content that might be surprising to humans. For example, AI tools have designed drone chassis and interplanetary lander legs that are lighter than their human-designed counterparts.

Despite its potential, AI cannot support all human skills that are essential for idea development, such as real-life observations or personal interactions. In addition, exploration without a dedicated outcome in mind, adding new domains of knowledge on the go and improvisation are challenging for AI. For example, a tool that optimises flight routes in terms of CO<sub>2</sub> emissions would not simply suggest that we switch to transportation via trains or meetings via video conference.

Conversely, AI can also hinder human creativity by preventing us from spending time on activities that are demonstrably important for the development of new ideas, such as unbiased communication with others, active reflection and mental rest. Today, many digital applications are designed—very successfully—to consume as much of our time as possible. Through AI, even more activities will be enabled by digital technology (e.g. cooking with smart speakers), and AI's ability to influence human behaviour will grow, for example, through algorithms that can predict our behaviour and communicate in natural language.

Thus, to harness the potential of AI for human creativity, we should take the following measures:

- > We should use AI for tasks in which it is clearly superior to humans and where the benefits of humans performing the activity (e.g. due to gains in experience) do not outweigh the benefits of automation, such as searching big literature libraries.
- > We should develop AI applications that support the skills and activities that are vital for idea development. For example, as humans are better at exploring without a dedicated outcome in mind, AI tools should enable humans to interactively browse through data and quickly develop, test and refine hypotheses.
- > Time gained through AI should be delegated to activities that are crucial for the development of new ideas, such as unbiased exchange with others or active reflection. This requires targeted action; otherwise, digital technology could tempt us from spending too much time on non-creative pursuits.

The goal should be to use AI exactly where it can support human creativity and not where it does more harm than good. Human creativity needs to be augmented with and protected from AI at the same time. In the future, it is likely that the most successful ideas do not come from bright thinkers alone, but also from those who are best at steering machines in their desired directions.

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