

The future of creativity in basic research: Can artificial agents be authors of scientific discoveries?

Initiative: Außergewöhnliches

Bewilligung: 16.03.2020

Laufzeit:

Projekt-Website: <https://www.philosophie.uni-konstanz.de/ag-mueller/forschung/projekte/the-future-of-creativity/>

The project studies the role that current and emerging technologies of Artificial Intelligence (AI) can play in basic research, focusing on agency, creativity, and authorship. The aim is to help provide the conceptual machinery with which to describe, evaluate, and regulate the current transformative technological development. While that development impacts many sectors including economy, mobility, and the arts, the chosen focus on science allows to study the concepts of agency, creativity, and authorship in a relatively well-structured yet rich environment. How will AI techniques affect our laboratories, the nature and meaning of scientific experiment, and basic research in general? More generally: Can machines be agents, can they be creative, can they produce something genuinely new? To answer these pressing questions, the work connects methods and techniques from philosophy, physics, and AI in an integrated interdisciplinary approach and makes use of connections to three groups that currently transform their scientific workflow with a focus on AI methods (Collective behaviour, Konstanz; Climate Modeling Alliance, CalTech; Quantum optics, Innsbruck and Vienna).

Projektbeteiligte

Prof. Dr. Thomas Müller

Universität Konstanz
Fachbereich Philosophie
Konstanz

Prof. Dr. Hans Briegel

Universität Innsbruck
Institut für Theoretische Physik
Innsbruck
Österreich

Open Access-Publikationen

Honeybee communication during collective defence is shaped by predation

How a minimal learning agent can infer the existence of unobserved variables in a complex environment

Quantum machine learning beyond kernel methods

Introducing a four-fold way to conceptualize artificial agency

Taming Pereboom's wild coincidences