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Can Deep Neural Networks Model the Human Faculty of Abstraction?

Cameron Buckner is an Associate Professor in the Department of Philosophy at the University of Houston. He began his academic career in logic-based artificial intelligence. This research inspired an interest into the relationship between classical models of reasoning and the (usually very different) ways that humans and animals actually solve problems, which led him to the discipline of philosophy. He received a PhD in Philosophy at Indiana University in 2011 and an Alexander von Humboldt Postdoctoral Fellowship at Ruhr-University Bochum from 2011 to 2013. His research interests lie at the intersection of philosophy of mind, philosophy of science, animal cognition, and artificial intelligence, and he teaches classes on all these topics. Recent representative publications include "Empiricism without Magic: Transformational Abstraction in Deep Convolutional Neural Networks" (2018, Synthese), and "Rational Inference: The Lowest Bounds" (2017, Philosophy and Phenomenological Research)—the latter of which won the American Philosophical Association's Article Prize for the period of 2016–2018. He is currently writing a book about the philosophy of deep learning (on support from the National Science Foundation).

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