



## Abductive Cognition and Machine Learning: Philosophical Implications

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### Message from the Guest Editor

We are living in the age of AI. If DeepBlue was a mere astral signal, AlphaGo was a symbolic announcement of the beginning of a new era. Now, as AlphaFold 2 takes another huge step towards the goal of AGI, AI is changing all aspects of our lives. How should we understand this phenomenon and its far-reaching philosophical implications? While machine learning is known to be the key to enhancing AI algorithms, recent advances in cognitive neuroscience have been another crucial factor. Nevertheless, much is still unknown about how these advancements in AI are possible. How are we to fathom super-intelligent machine minds in order to live well together with them in the future? Turning to abductive cognition seems to be a natural strategy to answer this question, as it has elements of both intuition and inference. Pioneered by C.S. Peirce in the late 19th century, abduction was studied extensively in logic, philosophy of science, cognitive and computer science, AI, law, and semiotics during the 20th century, and several notable monographs on abduction have been published in the first two decades of the 21st century, uncovering the logical form and various patterns of abduction.





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