

Automating Scientific Discovery: The Case of Medical Research

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Scientific discovery remains a largely neglected topic in the philosophy of science. Since around the middle of the twentieth century, the received view has been that discovery is not governed by logic or rationality. This attitude is due in large part to the efforts of Popper, who argued that there is no set of rules, not even rules of thumb, that can systematically lead a scientist to a discovery. In his own words, “every discovery contains ‘an irrational element’, or ‘a creative intuition’...” ([1935]1959: 8). In this talk, we explore the prospects of automating some aspects of scientific discovery through AI. It is argued that neuro-symbolic AI offers hope in the reinstatement of the rationalist model, and the (semi-)automation, of discovery. A specific neuro-symbolic system is proposed that seeks to integrate the best of both neural and symbolic AI. The talk concludes with some comments on how such a system may help in medical research and medical science communication.

References:

Popper, K. ([1935/1959] 2002). *The Logic of Scientific Discovery*. New York: Basic Books.