

The Functional Account of Computing Mechanisms

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Abstract

This paper offers an account of what it is for a physical system to be a computing mechanism—a mechanism that performs computations. A computing mechanism is any mechanism whose functional analysis ascribes it the function of generating outputs strings from input strings in accordance with a general rule that applies to all strings. This account is motivated by reasons that are endogenous to the philosophy of computing, but it may also be seen as an application of recent literature on mechanisms. The account can be used to individuate computing mechanisms and the functions they compute and to taxonomize computing mechanisms based on their computing power. This makes it ideal for grounding the comparison and assessment of computational theories of mind and brain.

Keywords: computation, computing mechanism

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