

Cognitive Reasoning

A Formal Approach

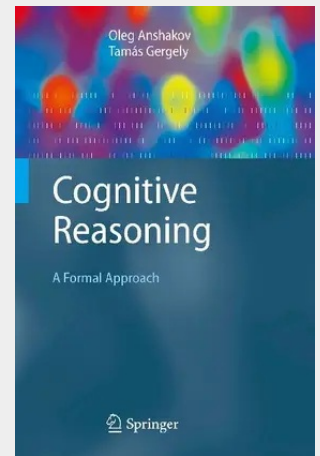
Dealing with uncertainty, moving from ignorance to knowledge, is the focus of cognitive processes. Understanding these processes and modelling, designing, and building artificial cognitive systems have long been challenging research problems.

This book describes the theory and methodology of a new, scientifically well-founded general approach, and its realization in the form of intelligent systems applicable in disciplines ranging from social sciences, such as cognitive science and sociology, through natural sciences, such as life sciences and chemistry, to applied sciences, such as medicine, education, and engineering.

The main subject developed in the book is cognitive reasoning investigated at three levels of abstraction: conceptual, formal, and realizational. The authors offer a model of a cognizing agent for the conceptual theory of cognitive reasoning, and they also present a logically well-founded formal cognitive reasoning framework to handle the various plausible reasoning methods. They conclude with an object model of a cognitive engine.

The book is suitable for researchers, scientists, and graduate students working in the areas of artificial intelligence, mathematical logic, and philosophy.

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