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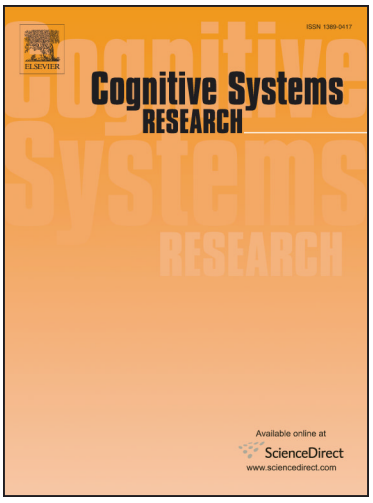

The Icarus Cognitive Architecture

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The ICARUS Cognitive Architecture

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Abstract

Cognitive architectures aim to provide an infrastructure for general intelligence. Inspired by psychological evidences, researchers in this field use these systems to model various aspects of human mind. This paper reviews the evolution of one such architecture, ICARUS, over the three decades' history of development. We describe different versions of the architecture in the context of related work and provide future directions for research with ICARUS.

Keywords: Cognitive architectures, ICARUS architecture, general intelligence

Introduction

The cognitive systems movement aims to understand the nature of human mind as an integrated system (Langley, 2012). Through a series of inherently exploratory research, scientists in this field build systems that possess high-level cognitive capabilities using structured representations and processes that work over them. These systems, often categorized as *cognitive architectures*, provide infrastructure for modeling human cognition by committing to a particular set of representation and memories, providing facilities to process knowledge and other structures, and often enabling their embodied agents to learn from various experiences.

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