Type: Monograph

Title: A Knowledge Representation Practionary: Guidelines Based on Charles Sanders Peirce

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Abstract: This major work on knowledge representation is based on the writings of Charles S. Peirce, a logician, scientist, and philosopher of the first rank at the beginning of the 20th century. This book follows Peirce's practical guidelines and universal categories in a structured approach to knowledge representation that captures differences in events, entities, relations, attributes, types, and concepts. Besides the ability to capture meaning and context, the Peircean approach is also well-suited to machine learning and knowledge-based artificial intelligence. Peirce is a founder of pragmatism, the uniquely American philosophy.

Knowledge representation is shorthand for how to represent human symbolic information and knowledge to computers to solve complex questions. KR applications range from semantic technologies and knowledge management and machine learning to information integration, data interoperability, and natural language understanding. Knowledge representation is an essential foundation for knowledge-based AI.

This book is structured into five parts. The first and last parts are bookends that first set the context and background and conclude with practical applications. The three main parts that are the meat of the approach first address the terminologies and grammar of knowledge representation, then building blocks for KR systems, and then design, build, test, and best practices in putting a system together. Throughout, the book refers to and leverages the open source KBpedia knowledge graph and its public knowledge bases, including Wikipedia and Wikidata. KBpedia is a ready baseline for users to bridge from and expand for their own domain needs and applications. It is built from the ground up to reflect Peircean principles.

This book is one of timeless, practical guidelines for how to think about KR and to design knowledge management (KM) systems. The book is grounded bedrock

for enterprise information and knowledge managers who are contemplating a new knowledge initiative.

This book is an essential addition to theory and practice for KR and semantic technology and AI researchers and practitioners, who will benefit from Peirce's profound understanding of meaning and context.

Language: English

Keywords: Knowledge representation