

REALITY, UNIVERSAL ONTOLOGY AND KNOWLEDGE SYSTEMS:

Towards the Intelligent World

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ABSTRACT

The book is basically about reality, its content, structure and dynamics, and how the real world may be effectively represented both by human minds and intelligent machines. The world is analyzed as the largest unbounded environment (entity) by the agency of ontological representations and mathematical descriptions of its cardinal entities and relationships. This approach affords to develop the emerging Knowledge Society intellectual technology as the real world knowledge systems and applications capable to represent and reason about reality, its diverse aspects and levels and nonlinear complexities. The whole research is performed with the basic goal to design a standard world model capable to uniformly organize human knowledge, to create powerful reasoning systems and to secure communication interoperability between two species of intelligences, existing human beings and nascent computing reasoning systems promising the profound revolution in human values and ways of life.

Developing a consistent account of the world as the unique intersection of general ontology and fundamental mathematics, designated as a unified framework ontology or universal formal ontology (UFO), we establish a line of research where reality occupies a determinative position:

Reality → World Representation {Theory of Reality (UFO) → Fundamental Mathematics (Lattice Theory, Set Theory, Category Theory) → Logic of Things → Science → Computer Science} → Knowledge Application {AI Technology → Onto-Semantic Web → Global Intelligent Cyberspace } → Knowledge Technology Civilization → Intelligent World (Reality, Universe)

Reality, being, the world, or the universe along with its first-class denizens (objects, states, changes, relations) are the kinds of things to be represented as the principal concepts of mind, the major categories of language, the underlying data structures and processes in information systems. The UFO is designed as the world knowledge groundwork or unifying semantic platform within which could be integrated the particular knowledge (sciences) of the physical, biological, mental, and cultural worlds, to be encoded as the entity data types and major rules of operations in the reasoning systems of high-level intelligence, fundamental to the Intelligent World.

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