

Existing Semantic Ontology and its Challenges for Enhancing Interoperability in IoT Environment

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ABSTRACT

Internet of Things technology is widely used in several domains including industry, society, and the environment. Heterogeneous data is a critical problem in the Internet of Things technology; this heterogeneity leads to a lack of interoperability which limits the possibility of sharing and reusing data for supporting decision-makers in different fields. The aim of this paper is to review the current IoT ontologies and their main challenges. Ontology has been used to solve the heterogeneity problem and enhance interoperability for the Internet of Things by using common core ontology. The main feature and success factor of ontology as a representation of knowledge is that the features being flexible, clearable, shareable, and reusable. This study is probable for contributing to developing common core ontology for the Internet of Things with a comprehensive view for solving the lack of sharing information and offer complete recommendations for supporting the interoperability processes for IoT application domains.

KEYWORDS

Scientific computing; Semantics; Medical services; Ontologies; Real-time systems; Information management; Internet of Things

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