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Object Negotiation Mechanism for an Intelligent Environment Using Event Agents

Authors : Chiung-Hui Chen

Abstract : With advancements in science and technology, the concept of the Internet of Things (IoT) has gradually developed. The development of the intelligent environment adds intelligence to objects in the living space by using the IoT. In the smart environment, when multiple users share the living space, if different service requirements from different users arise, then the context-aware system will have conflicting situations for making decisions about providing services. Therefore, the purpose of establishing a communication and negotiation mechanism among objects in the intelligent environment is to resolve those service conflicts among users. This study proposes developing a decision-making methodology that uses “Event Agents” as its core. When the sensor system receives information, it evaluates a user’s current events and conditions; analyses object, location, time, and environmental information; calculates the priority of the object; and provides the user services based on the event. Moreover, when the event is not single but overlaps with another, conflicts arise. This study adopts the “Multiple Events Correlation Matrix” in order to calculate the degree values of incidents and support values for each object. The matrix uses these values as the basis for making inferences for system service, and to further determine appropriate services when there is a conflict.

Keywords : internet of things, intelligent object, event agents, negotiation mechanism, degree of similarity
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