

Design & Development of a Prototype Intelligent Blind System Using Fuzzy Reasoning

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Abstract

Thanks to cyber-physical systems (CPSs) and enhanced AI techniques, the "everyday things" in our environment have become increasingly intelligent in recent years in the aspects of Automation of Everything (AoE). An IoT application for a smart blind system (SBS) using fuzzy logic to intelligently adjust to an optimal position based on data from local sensors, Wisdom-as-a-Service (WaaS) and Insight-as-a-Service (InaaS) from smart domains and customer preferences has been developed. Testing of this system as a proof-of-concept yields promising results, as the fuzzy logic can effectively control the blind to a position that is desirable under the given environmental conditions. Further, all the input data is utilised productively, ensuring that decisions made by the system are well-informed. Compared to competitors' offerings, the proposed system offers superior performance due to its extensive input consideration and the precise design of the fuzzy logic for automated decision-making.

Index Terms— Fuzzy Logic, Smart Technology, Automation of Everything (AoE), Internet of Things (IoT), Smart City, Smart Building, Smart Blind, Automated Decision-Making, Approximate Reasoning.

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