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Preference-based Internet of Things dynamic service selection for smart campus

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ABSTRACT

The usage of the Internet of Things technology across different service provisioning environments has increased the challenges associated with service discovery and selection. Users cannot always remember the Internet Protocol (IP) address for every service they need to utilize from the middleware registry. In order to address this challenge, an architecture that enables a representation of user preferences and manipulates relevant services description of available services is developed. This paper, an algorithm derived from the architecture that contributes towards addressing the service selection and discovery problem is proposed. The accuracy of the algorithm is evaluated based on response time, recall and precision metrics. The experiments show that the content-based algorithm works better than collaborative algorithm based on user preference. The content-based algorithm more returns relevant services to the user and takes shorter time as compared to the collaborative filtering.