

Abstract: iLifelog: Modeling and Practice of Activity Recognition with Smartphone for the Effective Lifelog Storage System

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Abstract

With the advance of a variety of software / hardware technologies and wireless networking, there is coming a need for the study of ‘lifelog’ for collecting and managing an individual’s daily life with smartphone devices. The lifelog data called ‘an individual’s black box’ enable a variety of customized services through an individual’s contextual information in ubiquitous computing environment. The method for efficiently managing lifelog provides high efficient retrieval and effective lifelog management to trace back to the past experiences or predict the future behaviors. In this paper, first, we present the architecture and the cost analysis for iLifelog - the storage system for effective lifelog management. Second, we present activity recognition for extracting meaningful behavior information from huge activities collected from accelerometer sensor equipped with smartphone. The iLifelog analyzes an individual’s daily activities and only extracts the semantic data which have the most significant changes or events among a series of sensor data. The storage system overcomes the limitations of the smartphone devices - reducing storage capacity and network transfer cost. Finally, we give experimental measurements to demonstrate the efficacy of iLifelog.

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