Foreword and Editorial

International Journal of Smart Device and Appliance (IJSDA)

We are very happy to publish this issue of an International Journal of Smart Device and Appliance by Global Vision Press.

This issue contains 4 articles. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

In the paper "Data Processing System Using CQRS Pattern and NoSQL in V2X Environment", the vehicle-to-everything (V2X) environment comprises a variety of devices that exchange or share vehicle-to-vehicle, vehicle-to-infrastructure, and vehicle-to-pedestrian information while the vehicles are being driven. In V2X environments, large amounts of unstructured data are recorded by various devices. Storing large amounts of unstructured data in a relational database would require all the data generated by the different types of devices to be normalized. In addition, the transaction-based atomic, consistency, isolation, and durability (ACID) characteristics of relational databases would not be suitable for processing large amounts of data of this nature. In this study, they apply the command and query responsibility segregation (CQRS) pattern to separate commands and queries and to process large-scale data efficiently. NoSQL, which provides specialized functions for handling unstructured data, as well as the commands and queries, can be separated; thus, NoSQL and RDBMS can be selectively used depending on the V2X environment and system characteristics. They propose a data processing system suitable for the V2X environment using a CQRS pattern and the NoSQL-based database. By applying the CQRS pattern, NoSQL and RDBMS can be used together. When storing large amounts of data, use NoSQL, and when providing information or statistics to users, select an RDBMS to use together. In addition, both repositories can be easily scaled up when processing large amounts of data, making efficient use of resources.

"Hyperledger Fabric based Intelligent IoT MES (Manufacturing Execution System) Implementing the platform" explored that in recent years, intelligent IoT systems have maximized production efficiency through analysis and monitoring of the data they produce. In addition, it has features that can reduce inventory losses by adjusting inventory and output according to market conditions. Because most of the MES's IoT system is in operation, it also contains information such as product schematics and performance. As security is strict, a security system is needed that performs better than a typical security system. This paper proposes an intelligent IoT MES platform using Hyperledger Fabric, the latest Blockchain technology to address the security issues of these MES.

The paper "Design of Context-Aware Resource Management for Healthcare IoT" explored that edge computing is emerging as a technology that complements cloud computing in an IoT environment where huge amounts of data are generated in real time. This paper introduces recent IoT network and edge computing technology and describes healthcare IoT network and related edge technologies. This paper also proposes efficient resource

management called CaRM to ensure stable data services for sensor nodes and edge gateways in the edge-based IoT environment. In CaRM, the context-aware classification and dynamic resource management are devised to improve the stability and performance for healthcare IoT service. Based on the context-aware classification, the sensor-level resource tree and application-level resource tree are generated. After creating a service-context tree that incorporates these two trees, CaRM controls the permitted range of individual resource consumption at each service level to guarantee ensure service.

In the paper "Health App User Experience Analysis Research: Focusing on the Step Count App", Due to the increasing interest of people in health and life sports, health is a major content in various media. This background and development of information technology has led to the release of hundreds of thousands of mobile health applications. Nevertheless, studies evaluating the user experience for mobile app usability and app success are insufficient. Therefore, this study aims to describe the phenomenon and identify problems and improvements by comprehensively exploring the user experience of the step count app of users in their 20s. FGI was performed to grasp the rich empirical data and satisfaction level of users in detail. FGI is a research method conducted by exchanging perceptions and experiences on subjects and cases according to the purpose of the research. As a result of the study, it was found that it is necessary to improve the level of playfulness of the step count app, various additional functions, and reliability.

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