

## **Foreword and Editorial**

### **International Journal of Multimedia and Ubiquitous Engineering**

We are very happy to publish this issue of International Journal of Multimedia and Ubiquitous Engineering by Science and Engineering Research Support soCiety.

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

The study entitled “Contribution for Content based image retrieval by multiple descriptors” states that one of the current challenges in the CBIR (Content Based Image Retrieval) domain is to find the best combination of several descriptors. Recently, several studies have been led to overcome this problem by integrating the genetic programming, however this technique required an important calculation time. The high computational cost is due to the high number of function calls required by this method and the high dimension of image descriptors used. To reduce this calculation time, they present a new search method that uses a multi-resolution BOF (Bag of Features) and genetic programming. In this context, for each descriptor type (e.i. color, shape, etc.), each image is described by a pyramid of histograms (pyramid of BOF), with each histogram represents the lower resolution of its above histogram. They start the similarity search by applying the GP (Genetic programming) to the lower histograms (top level of pyramid) for each descriptor type. In addition, They repeat this process just on the result obtained but by using the histograms correspond to the next levels of each pyramid of each image to refine the result obtained. The proposed method improves the search time without deteriorates the result quality in term of precision. They validate the method against three databases. They have shown that the approach provides interesting and powerful experimental results.

In the paper “Intermediate Language Translation and Evaluation for Binary Code Software Weakness Analysis”, the use of third-party libraries has become a natural phenomenon as more programs are built on a large scale. The problem with using third-party libraries is that, in most cases, they only have access to the binary code. And due to the lack of access to source code, software weakness analysis is very difficult. In this paper, they propose a method to translate binary code to Smart Intermediate Language (SIL) for software weakness analysis.

The study “Data Communication of OBS-emplaced Navigation System Based on Multi-Serial Networking” built an ocean bottom seismometer (OBS)-emplaced navigation system and designed a serial port networking device that contains several RS232 serial ports and an Ethernet interface. The serial ports networking device has a built-in embedded multiple serial ports gateway based on the TCP/IP protocol. The gateway comprises TCP/IP protocol conversion and multiple serial port data processing modules. The differential GPS receiver, OBS, depth sounder, compass, and other equipment are all connected to the network via RS232 serial ports. Subsequently, all serial data streams are transformed into an Ethernet data stream through protocol conversion. A TCP/IP protocol includes several message types, such as network port data receipt, serial port baud rate setting, serial port baud rate response, serial port switch set, serial port switch response, serial port status query, and serial port status query response, among others. Accordingly, they employ data analysis to obtain specific information on navigation, as well as the

latitude, longitude, direction, and depth from the original data stream. Sea trials indicate that the proposed system can provide real-time, accurate, and reliable data, and can address the needs of the OBS-emplaced navigation.

The article “Anthropomorphic Character on Prototyping Cognitive Video Game for Preschoolers” states that selecting a game character becomes an essential consideration in game design, and even more in a game designed for preschoolers. Game character is one of the several key parts from a game component recommended by pediatric development expert to be appropriately designed in a game, since game character could bring positive or negative influence for a preschooler as its user. The primary objective of this paper was to analyze types of suitable characters liked by children from the perspective of both pediatric development experts and children themselves. The method applied in this study was recommendation result evaluation and analysis of pediatric development experts. Moreover, it collaborated survey result of children preference for game characters. Based on the evaluation and analysis result, the most suitable game prototype design for preschoolers was anthropomorphic character based on both the recommendation from experts and the children’s preference for the game characters.

October 2017

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**Editors of the October Issue on  
International Journal of Multimedia and Ubiquitous Engineering**