EDITORIAL

The IADIS International Journal on Computer Science and Information Systems (IJCSIS) is a peer-reviewed scientific journal published exclusively in an electronic format. Its mission is to publish original contributions pertaining to the topics of Applied Computer Science, Information Systems and their Applications, to disseminate knowledge amongst its readers and to be a reference publication. The IADIS IJCSIS publishes original research papers and review papers, as well as auxiliary material: short ongoing research papers, case studies, conference reports, management reports, book reviews and commentaries.

This number (ISSN: 1646-3692) assembles 7 selected original papers that bring together research covering the wide spectrum of Computer Science and Information Systems and their applications. The authors' contributions embrace important research topics, namely Wmanets, text summarisation, main memory databases, hyper video, explorative links, GPU, eXtreme programming and image filtering. Also, they intend to provide a current depiction of the research in the field and present their own empirical conclusions while providing ground for future research work.

The first paper in this issue by Iman Almomani and Hussein Zedan (De Montfort University, UK) entitled HETEROGENEOUS CERTIFICATE AUTHORITY FOR WIRELESS MOBILE AD HOC NETWORKS (WMANETS) presents an innovative security protocol for the management of digital certificates in Fully Managed WMANETs. The proposed security algorithm, the FM-WMANET, aims to improve the performance of WMANETs in terms of security, by studying the integration of heterogeneous wireless networks. The algorithm was assessed using graph theory and the latest version of NS-2.

The second paper by Kaustubh Patil and Pavel Brazdil (University of Porto, Portugal) entitled SUMGRAPH: TEXT SUMMARIZATION USING CENTRALITY IN THE PATHFINDER NETWORK proposes a graph theoretic method for automatic text summarisation which intends to produce extractive summaries of a single document. In the system the authors present, the SumGraph, text is represented by a graph with sentences as nodes and the weights on the links represent intra-sentence disparity. Despite the fact that graphs have been used before in summarisation, this approach is innovative because it employs the Patfinder Network Scaling technique.

The third paper by Jun Miyazaki (Nara Institute of Science and Technology, Japan), QUERY PROCESSING AND ACCESS PATH SELECTION IN THE RELATIONAL MAIN MEMORY DATABASE USING A FUNCTIONAL MEMORY SYSTEM employs a functional memory system to explain heuristic rules for selecting a pertinent access path for a given query in main memory databases. The author presents three hardware-supported memory access schemes to address the shortcomings of traditional cache-based memory access in terms of query processing in main memory databases. The effect of the proposed heuristic rules is also assessed in this paper.

The fourth contribution by Hilko Donker and Daniel Kloppich (Dresden University of Technology, Germany) entitled DESIGN OF LINKS IN HYPER VIDEOS examines the design of links in hyper videos. Explorative links must be found by users in a scene and can be represented by words or signs on objects, by striking objects and by doors. The authors conducted a usability test to assess the identifiability, self-descriptiveness and reliability of explorative links in hyper videos.

The fifth paper by Calle Lejdfors and Lennart Ohlsson (Lund University, Sweden), PYGPU: A HIGH-LEVEL LANGUAGE FOR HIGHSPEED IMAGE PROCESSING introduces the PyGPU, a language for programming algorithms, in image processing, which run on the GPU. The PyGPU is an embedded language which allows image processing algorithms to be written in the high level, object-oriented language Python. It employs a point-wise image abstraction that, along with Python, enables algorithms in image processing to be expressed at a high level of abstraction, facilitating the reading and understanding of the code.

The sixth paper by Sarah Powell, Frank Keenan and Kevin McDaid (Dundalk Institute of Technology, Ireland) entitled ENHANCING AGILE REQUIREMENTS ELICITATION WITH PERSONAS explains a development process incorporating personas with eXtreme Programming (XP), the most popular Agile Method (AM). The authors believe that AMs and specially XP can, in some scenarios, be improved if time and effort are spent to examine the features of different user groups at the beginning of projects. The assessment of this process was made through a case study involving internet development.

The final contribution to this volume by Huihai Lu, John C. Woods and Mohammed Ghanbari (University of Essex, UK), A PLATFORM FOR REGION SPACE ANALYSIS IN BINARY PARTITION TREES proposes an original region-based image analysis platform, which offers an effective technique for object extraction, image segmentation and filtering. It connects hierarchical image regions with physical world objects and requires limited user involvement. The capacity to extract semantic objects has been a challenge for decades and it is a core hurdle in image cognition. The authors' experimental results demonstrate that this innovative method assists the extraction of semantic content from images.

These papers illustrate diverse facets of research done on Applied Computer Science, Information Systems and their Applications and contribute with the work they've developed to the enrichment of this field. The review of the relevant literature contributes to the theoretical grounding of these areas and the original empirical research on different technologies creates opportunity for the development of ground-breaking findings.

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