Special issue on "The Eighth International Symposium on Information and Communication Technology – SoICT 2017"

Since 2010, the Symposium on Information and Communication Technology – SoICT has been organized annually. The symposium provides an academic forum for researchers to share their latest research findings and to identify future challenges in computer science. The best papers from SoICT 2015 and SoICT 2016 have been extended and published in the Special issue "SoICT 2015" and "SoICT 2016" of the Informatica Journal, Vol.40, No.2 (2016) and Vol. 41, No. 2 (2017). In 2017, SoICT was held in Nha Trang, Vietnam, during December 7–8. The symposium covered four major areas of research including Artificial Intelligence and Big Data, Information Networks and Communication Systems, Human-Computer Interaction, and Software Engineering and Applied Computing.

Among 132 submissions from 22 countries, 64 papers were accepted for presentation at SoICT 2017. Among them, the following six papers were carefully selected, after further extension and additional reviews, for inclusion in this special issue.

The first paper, *"Spectrum utilization efficiency of elastic optical networks utilizing coarse granular routing"* by Hai-Chau Le and Ngoc T. Dang investigated an elastic optical network that uses coarse granular routing based on coarse granular node architecture. The network takes advantages of both elastic optical networking and coarse granular routing technologies to cope with the trade-off between the link cost and the node cost in order to build a spectrum-and-cost efficient solution for future Internet backbone networks. The authors have evaluated the hardware scale requirement and the spectrum utilization efficiency of the network with typical modulation formats under various network and traffic conditions.

The second paper, *"Time-stamp incremental checkpointing and its application for an optimization of execution model to improve performance of CAPE"* by Van Long Tran, Eric Renault, Viet Ha Hai, and Xuan Huyen Do presents an improvement of Discontinuous Incremental Checkpointing, and a new execution model for CAPE using new techniques of checkpointing. It contributes to improve the performance and make CAPE even more flexible.

The third paper, *"SHIOT: A novel SDN-based framework for the heterogeneous Internet of Things"* by Hai-Anh Tran, Duc Tran, Linh-Giang Nguyen, Quoc-Trung Ha, Van Tong, and Abdelhamid Mellouk developed an SDN-based framework called SHIOT which relies on the ontology for examining the end-user requests and applies an SDN controller to classify flow scheduling over the task level.

The fourth paper, *"USL: A domain-specific language for precise specification of use cases and its transformations"* by Chu Thi Minh Hue, Dang Duc Hanh, Nguyen Ngoc Binh, and Le Minh Duc introduces a domain-specific language named the "Use case Specification Language (USL)" to precisely specify use cases. The authors define the abstract syntax of USL using a metamodel together with OCL wellformedness rules and then provide a graphical concrete syntax for the usability goal. This paper also defines precise semantics for USL by mapping USL models to Labelled Transition Systems (LTSs). It opens a possibility to transform USL models to software artifacts such as test cases and design models.

The fifth paper, *"Effective deep multi-source multi-task learning frameworks for smile detection, emotion recognition and gender classification"* by Dinh Viet Sang and Tran Bao Cuong proposes effective multi-task deep learning frameworks which can jointly learn representations for three tasks: smile detection, emotion recognition, and gender classification. The frameworks can be learned from multiple sources of data with different kinds of task-specific class labels.

The sixth paper, *"Alignment-free sequence searching over whole genomes using 3D random plot of query DNA sequences"* by Da-Young Lee, Hae-Sung Tak, Han-Ho Kim, and Hwan-Gue Cho proposes a new alignment-free sequence comparison and search method to overcome the limitations of the alignment-based model.

We hope that readers interested in Information and Communication Technology will find this Special Issue a useful collection of papers.

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