

## GUEST EDITORIAL PREFACE

# Special Issue on Four Extended Articles of Selected Presentations from RIVF 2013

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Evolving from a French speaking conference on computer science in its early stage, RIVF has become a major scientific event for researchers in the field of Computing and Communication Technologies, not only in Vietnam but also worldwide. Started in 2003, the International Conference on Computing & Communication Technologies RIVF (Original name was: Research, Innovation, and Vision for the Future), was originally scheduled every 12 months in Vietnam. Since 2009, the conference is scheduled every 18 months.

RIVF 2013 was the 10th edition of this conference. It took place in Hanoi and was hosted by VNU University of Engineering and Technology (UET) with participation of VNU-IFI and Hanoi University of Education (HNUE). RIVF is sponsored by the IEEE Communications Society and IEEE Computational Intelligence Society since 2006.

The objective of this conference is to offer an opportunity for researchers and innovators to discuss problems, share results, identify emerging issues, and establish academic collaborations in various disciplines of computing

and communications. Additional information and history of the RIVF conference series can be found on the web site of the conference: [www.rivf.org](http://www.rivf.org).

This special issue of the *International Journal of Distributed Systems and Technologies* (IJDST) contains four articles which are extended versions of selected presentations of RIVF 2013. They are selected articles of the track: Communication and networking.

The first article “Time Domain Replica Signal Based Interference Compensation for SPMIMO/ OFDM with Large Delay Spread Channel” concerns multiple-input multiple-output (MIMO) systems using orthogonal frequency division multiplexing (OFDM). In these systems, transmission performance suffers severe degradation caused by the large delay spread channel greater than guard interval (GI) which results in considerable inter-symbol interference (ISI) between adjacent symbols and inter-carrier-interference (ICI) among subcarrier in the same symbol. The paper tries to temper this problem by proposing the interference compensation scheme using the time

domain replica signals. The proposed solution makes the time domain replica signals from detected signals and the excess channel impulse responses over GI. After compensation of the time domain replica signals and the received signals, the channel state information (CSI) is recalculated and the CSI is updated. Finally, the channel compensation with updated CSI is carried out for obtaining accurate compensated signals.

The second article “Multiuser Diversity OFDMA using Power Priority Selection and Adaptive Clipping” also addresses a problem in wireless communication systems using orthogonal frequency division multiple access (OFDMA). These types of communication systems can achieve the multiuser diversity (MUDiv). This paper proposes to improve the system and the peak to average power ratio (PAPR) performance by using the subcarrier allocation with the power priority selection (PSS) and the adaptive clipping (AC) with the peak reduction signal.

The third article “Exploring Video Sharing Websites Content With Machine Learning” studies the characteristics of content on video sharing websites. Authors claim that a better understanding on online video content can help to analyze Internet users’ behavior and improve the video-sharing service. Therefore they propose to improve existing graph-sampling algorithm so that it could be more adapted to sample over the video sharing websites. They define a new category system, which can be applied to the analysis of content of many different video sharing websites. This is achieved using a machine learning approach. Tests were

realized on videos from YouTube and DailyMotion. The machine learning algorithm succeeds to classify 91.60% of all the videos. Authors also show that after one-year time, the content distribution on YouTube has changed a lot. The cultural goods take the most part of videos, which is more than 70%.

The fourth article “Robust and Efficient Custom Routing for Interconnection Networks with Distributed Shortcuts” aims at creating a robust and efficient custom routing mechanism for Distributed Shortcut Networks. The objective is to address new challenging issues posed by recently advanced studies in the areas of massively parallel computing and large-scale data centers. Authors propose to follow the design principles of Distributed Shortcut Networks (DSN), which construct non-random topologies with the creation of long-range shortcuts inspired by observations in small-world networks. However, they focus on designing a powerful custom routing mechanism which smartly exploits some precious properties of the topology. Tests made by authors show that the new DSN- $\alpha$  network they propose, performs significantly better than the basic DSN in term of communication latency while provides strengths in fault-tolerance as well as load-balance.

We wish to thank the RIVF conference and the authors for their contributions to our journal and we wish the readers will appreciate content of this issue of IJDST.

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*Pierre Kuonen obtained the Master degree in electrical engineering from the Swiss Federal Institute of Technology (EPFL) in 1982. After having worked during six years in the industry (petroleum and CAD development) he joined, in 1988, the Computer Science Theory Laboratory of the Computer Science Department of EPFL. He was involved in teaching and research on parallel programming and Computer Science Theory. He obtained the Ph.D. degree in 1993. From 1994 to 2000 he has been a scientific collaborator and heads the Parallel Computing Research Group (GRIP) at EPFL. He was senior lecturer of the course Parallelism. During this period he managed several European and national research projects. In February 2000 he joined the University of Applied Science of Western Switzerland in Valais (HES-SO/Valais) as computer science professor. From the beginning of March 2002 he started to progressively transfer his activity from the HES-SO/Valais to the University of Applied Science of Western Switzerland of Fribourg (HES-SO/Fribourg). Since 2003 he is full professor at HES-SO/Fribourg where he founded the GRID & Cloud Computing Group. Since 2013 this group has been integrated in the Institute of Complex Systems (iCoSys) which is co-lead by Pierre Kuonen. Besides his teaching activities, he continues to actively participate to national or international research projects mainly in the field of HPC and distributed computing. Pierre Kuonen is member of the steering committee of the RIVF conference and associate editor of IJDST.*