Proposal: Concurrency and Computation: Practice & Experience

Special Issue on **Security and Reliability in Big data**

1. Significance and Description

Big Data is now invading in every aspect of our daily life and promise to revolutionize our life. For example, human beings create about 2.5 quintillion bytes of data every day in 2012, which come from sensors, individual archives, social networks, Internet of Things, enterprise and Internet in all scales and formats. We face the most challenging issue, i.e., how to effectively manage such a large amount of data and identify new ways to analyze large amounts of data and unlock information. The issue has been emerging as a hot topic in Information and Communication Technologies (ICT) research. This special issue will present the recent advances in the new research direction such as security and reliability.

2. Topics

This special issue will cover two broad areas: security and reliability in big data. Any topics under these areas are solicited. These areas cover the following specific topics:

- Threat and Vulnerability Analysis in Big Data
- Architecture for Security and reliability in Big Data
- Encrypted Information Retrieval in Big Data
- Cryptanalysis and Applications in Big Data
- Lightweight Cryptographic Algorithms in Big Data
- Trust in Big Data
- Network Security, reliability in Big Data
- Network Forensics in Big Data
- Anonymous Communication in Big Data
- Physical Layer Security in Big Data
- Application Level Security and reliability in Big Data
- Attacks and Counter Measures in Big Data
- Information Forensics in Big Data
- Secure Cross-layer Design in Big Data
- Identity Management and Key Management in Big Data
- Intrusion Detection and Response in Big Data
- Malware and Virus Detection in Big Data
- Biometric Security and Forensics in Big Data
- Reliability and Availability in Big Data
- Reliability and Fault-tolerant Computing in Big Data
- Multi-core Programming and Software Tools in Big Data
- Resource Management and Scheduling in Big Data
- Tools and Environments for Big Data Software Development
- Software and Hardware Reliability, Testing, Verification and Validation in Big Data
- Big Data in Bioinformatics
- Industrial Applications in Big Data
- Scientific Applications in Big Data
- Power-Aware Computing in Big Data
- Multimedia and Big Data Management
- Network Protocols in Big Data

3. The Ways to Solicit Papers

This special issue is an open special issue where everyone is free to submit papers. We will solicit papers through two ways: conference and open call-for-papers. First, we will select the best papers from

- The 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications
  (TrustCom-13, http://anss.org.au/trustcom2013/)

- The 5th International Symposium on Cyberspace Safety and Security
  (CSS-13, http://trust.csu.edu.cn/conference/css2013/)

Both conferences are well-established conferences in the areas. The submission number of TrustCom-13 is 382. According to the previous experience, the anticipated submission number of CSS-13 will be about 100 (excluding associated workshops). The estimated accepted papers will be about 25% of the submissions. We plan to select the best papers from the accepted papers based on the reviews (comments and scores) and the presentations during the conferences.

Second, we also plan to publicize an open call-for-papers (CFP) by listing the CFP in major academic announcement mailing lists/websites and by sending the CFP to researchers in the areas around the world. We estimate there will be a number of submissions via the open call-for-papers. Then we plan to select another a few papers from the submissions.

Each paper (including the selected papers from the conferences) will go through a rigorous blind peer-review process by at least two international researchers. In total we plan to include 8 papers in this special issue. The acceptance rate will be fairly low but we regard quality as our top priority.

4. Proposed Dates

Paper submission: December 15, 2013
First round notification: March 31, 2014
Final papers: May 31, 2014
Publication: 2014

5. Proposed Guest Editors

Prof Yang Xiang (Deakin University, Australia, email: yang@deakin.edu.au)
Prof Ivan Stojmenovic (University of Ottawa, Canada, email: ivan@site.uottawa.ca)
Dr Peter Mueller (IBM Zurich Research Laboratory, Switzerland, email: pmu@zurich.ibm.com)
Dr Jun Zhang (Deakin University, Australia, email: jun.zhang@deakin.edu.au)

6. Potential Reviewers

Potential reviewers are the experts in the research areas all over the world, who will be mainly selected from TrustCom-13 and CSS-2013 program committees. The lists can be found at

- http://anss.org.au/trustcom2013/program_committee.html
- http://trust.csu.edu.cn/conference/css2013/