The 21st IEEE Pacific Rim International Symposium on Dependable Computing (PRDC 2015)

FINAL PROGRAM

18 – 20 November 2015
Zhangjiajie, Hunan Province, China

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http://trust.csu.edu.cn
Introduction to Central South University

Central South University (CSU) is a comprehensive and national key university under the direct administration of the Ministry of Education in China. CSU is among the first group of top universities in China admitted into “Project 211”, which is a project of building national key universities and colleges for the 21st century, and “Project 985”, which is a joint constructive project of building world-class universities co-sponsored by the Chinese central government and the local governments, and “Project 2011”, which is targeted for promoting the capability and capacity of cooperative creativity in top universities in China. Mr. Zhang Yaoxue, a member of the Chinese Academy of Engineering, and the inventor of Transparent Computing (TC), is the President of CSU.

Approved by the State Council, CSU was established on April 29, 2000, by merging three separate universities, including Hunan Medical University (HMU), Changsha Railway University (CRU), and Central South University of Technology (CSUT). CSU covers an area of around 5,117 mu (341 hectares).

CSU boasts a high-quality group of faculty, comprising of many famous scholars and experts with great influence both at home and abroad. Among them, there are 2 members of the Chinese Academy of Sciences, 15 academicians who are members of Chinese Academy of Engineering, 9 are members of the Discipline Assessment Group of the Academic Degrees Committee of the State Council, 23 scientific and technological experts have been recognized at a national level for their outstanding achievements, 545 experts have been awarded special subsidies from the Government, more than 1000 are doctorate supervisors and 33 are Special-term Professors funded by the Changjiang Scholar Program. In addition, CSU has appointed a number of well-known Chinese and international scholars as honorary professors, visiting professors, or adjunct professors.

CSU covers 12 fields of study, including engineering, science, medicine, management, literature, law, economics, philosophy, education, history, agriculture, and art, and offers military science as well. It consists of 30 colleges offering 92 programs for bachelors’ degrees, and a graduate school comprising of a number of national key disciplines, including 6 at first-level (ranking 8th in China), 12 at second-level and one in development. 91 first-level disciplines are authorized to confer masters and doctoral degrees. 191 programs are offered for doctoral degrees, 307 programs for masters’ degrees and 19 programs for professional masters’ degrees. CSU also has 42 post-doctoral exchange centers, ranking 9th among Chinese universities and colleges.

At present, more than 55,000 full-time students are studying at CSU, including 20,000 graduate students and 800 foreign students, from 31 provinces and municipalities of the mainland China, as well as 80 countries and regions of the rest of the world. CSU is a leading and top ranking Chinese university in the following aspects: one of the universities first starting an eight-year medical program (M.D.), the first university running a pilot class for training innovation-oriented senior engineering talents, the first civilian university offering master degree in military command and technique for officers, boasting five national talents training and teaching bases, six national centers for experimental teaching, 57 national exemplary courses, six bilingual national exemplary courses, six “excellent teachers” and eight teaching teams highly recognized by the state, 15 National Top 100 Doctoral Dissertations produced by its graduates since 2000. CSU also possesses three national first-class affiliated hospitals equipped with state-of-the-art medical facilities.

http://www.csu.edu.cn/
Introduction to Jishou University

Jishou University (JSU) is a public university in the western part of Hunan Province and the only comprehensive university in the border area of Hunan, Hubei, Chongqing and Guizhou provinces. Founded in September 1958, the University is composed of two campuses in Jishou and Zhangjiajie cities, with the main campus in Jishou City, the capital city of Xiangxi Autonomous Prefecture.

In 2003, the university was entitled the right to confer master’s degrees. In October 2006, the university successfully passed the undergraduate education evaluation on regular institutions of higher learning organized by the Ministry of Education with a comment of “Excellent”. The year of 2012 saw the university rank among “universities of capacity construction project in mid-west”. At the same year, the university was approved to carry out “Ph. D program catering for special demands of our country”.

The university covers an area of 1.29 million square meters with the total building area of 600,000 square meters. Presently, the university has been equipped with various teaching and scientific researching instruments and equipments with a total value of over RMB 170 million as well as a book and literature collection of over 2.3 million volumes. The university currently has over 1000 full-time teachers, of which 86% are provided with doctor’s or master’s degree.

At present, there are 70 undergraduate majors offered by the university, among which 3 are national characteristic majors, 8 are provincial characteristic majors, 8 are provincial key majors. The university is now operating 1 Ph.D program catering for special demands of our county, 14 first-grade disciplines for master’s degree, 1 professional master degree program and 1 characteristic, advanced and key discipline, covering 11 main disciplines. In addition, there are 14 provincial and ministerial level key research bases, 1 national experimental teaching demonstration center, 5 provincial practice teaching demonstration centers.

The students of various types total over 30,000, of which over 18,000 are full-time undergraduate students, over 800 are graduate students. The number of undergraduates in the independent college is almost 8,000, and that of adult diploma education students is over 7,000.

Over half a century, the university adheres to the educational philosophy of “Populace University”, regards it as its own duty to serve for the regional economic and social development, fulfills irreplaceable educational function in the west of Hunan and in the border area of Hunan, Hubei, Chongqing and Guizhou provinces, forming distinguished schooling-running characteristics and being widely approved by all sectors of the society.

http://www.jsu.edu.cn/
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Central South University (CSU)</td>
<td>Cover</td>
</tr>
<tr>
<td>Introduction to Jishou University (JSU)</td>
<td>Cover</td>
</tr>
<tr>
<td>Final Program at a Glance</td>
<td>Page</td>
</tr>
<tr>
<td>Quick Guide to Rooms for Keynote / Technical Sessions</td>
<td>Page</td>
</tr>
<tr>
<td>Welcome Messages</td>
<td></td>
</tr>
<tr>
<td>Keynote Speeches</td>
<td></td>
</tr>
<tr>
<td>Panels</td>
<td></td>
</tr>
<tr>
<td>Technical Sessions and Papers</td>
<td></td>
</tr>
<tr>
<td>Organizing and Program Committees and External Reviewers</td>
<td></td>
</tr>
<tr>
<td>Introduction to School of Information Science and Engineering, Central South University</td>
<td></td>
</tr>
<tr>
<td>Introduction to School of Software and Service Outsourcing of Jishou University</td>
<td></td>
</tr>
<tr>
<td>Conference Venue</td>
<td>Cover</td>
</tr>
<tr>
<td>Sponsors, Organizers, and Publishers</td>
<td>Cover</td>
</tr>
</tbody>
</table>


# FINAL PROGRAM OF PRDC 2015 AT A GLANCE

## November 17 (Tuesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:00-20:00</td>
<td>On-Site Registration</td>
</tr>
<tr>
<td>18:00-20:00</td>
<td>Reception @ Zhangjiajie International Hotel</td>
</tr>
</tbody>
</table>

## November 18 (Wednesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:30</td>
<td>On-Site Registration from 8:00 to 18:00</td>
</tr>
<tr>
<td>09:30-10:15</td>
<td>Opening Ceremony (Room 1)</td>
</tr>
<tr>
<td>10:15-10:45</td>
<td>Keynote 1: Prof. Kazuhiro Iwasaki, Tokyo Metropolitan University, Japan; Improvement of Shipped Product Quality Level for Logic VLSIs Based on Semiconductor Chip Layout (Room 1)</td>
</tr>
<tr>
<td>10:45-12:00</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>12:00-14:00</td>
<td>Lunch @ Zhangjiajie International Hotel</td>
</tr>
<tr>
<td>14:00-16:05</td>
<td>Session 2A (Room 1)</td>
</tr>
<tr>
<td>16:05-16:35</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>16:35-17:50</td>
<td>Session 3A (Room 1)</td>
</tr>
<tr>
<td>19:00-21:00</td>
<td>Dinner @ Zhangjiajie International Hotel</td>
</tr>
</tbody>
</table>

## November 19 (Thursday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30-09:15</td>
<td>Keynote 2: Prof. Sean He, University of Technology, Sydney (UTS), Australia; Detection of Denial-of-Service Attacks Based on Computer Vision Techniques (Room 1)</td>
</tr>
<tr>
<td>09:15-11:15</td>
<td>Panel 1: Open Dependability Issues in Cloud and Big Data Systems (Room 1) / Panel 2: Training Innovative Talents with Cooperation of Industry, Academics and Research (Room 0)</td>
</tr>
<tr>
<td>11:15-11:30</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>11:30-12:45</td>
<td>Session 4A (Room 1)</td>
</tr>
<tr>
<td>12:45-14:00</td>
<td>Lunch @ Zhangjiajie International Hotel</td>
</tr>
<tr>
<td>14:00-15:15</td>
<td>Session 5A (Room 1)</td>
</tr>
<tr>
<td>15:15-15:45</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>15:45-17:15</td>
<td>Session 6A (Room 1)</td>
</tr>
<tr>
<td>19:00-21:00</td>
<td>Banquet @ Zhangjiajie International Hotel</td>
</tr>
</tbody>
</table>

## November 20 (Friday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30-09:15</td>
<td>Keynote 3: Prof. John C.S. Lui, Fellow of ACM, Fellow of IEEE, The Chinese University of Hong Kong, Hong Kong: The Shapley Value: Its Use and Implications on Internet Economics (Room 0)</td>
</tr>
<tr>
<td>09:15-10:55</td>
<td>Session 7A (Room 1)</td>
</tr>
<tr>
<td>10:55-11:25</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>11:25-12:40</td>
<td>Session 8A (Room 1)</td>
</tr>
<tr>
<td>12:40-14:00</td>
<td>Lunch @ Zhangjiajie International Hotel, Closing of the Conference</td>
</tr>
</tbody>
</table>
Quick Guide to Rooms for Keynote/Technical/Panel Sessions

<table>
<thead>
<tr>
<th>Room Number</th>
<th>Room Name</th>
<th>Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 0</td>
<td>Grand Hall (多功能厅)</td>
<td>2</td>
</tr>
<tr>
<td>Room 1</td>
<td>Guoyan Hall (国宴厅)</td>
<td>2</td>
</tr>
<tr>
<td>Room 2</td>
<td>Xiangjiang Hall (湘江厅)</td>
<td>2</td>
</tr>
</tbody>
</table>
Welcome Messages from PRDC 2015 General Co-Chairs


It is our great pleasure to hold PRDC 2015 in Zhangjiajie, China on 18-20 November 2015. On behalf of the organizing committee of PRDC 2015, we would like to express to all participants who will attend the conference, our cordial welcome and gratitude.

IEEE PRDC 2015 is the twenty-first event in the series of symposia started in 1989 that are devoted to dependable and fault-tolerant computing. PRDC is recognized as the main event in the Pacific area that covers many dimensions of dependability and fault tolerance, encompassing fundamental theoretical approaches, practical experimental projects, and commercial components and systems. As applications of computing systems have permeated into all aspects of daily life, the dependability of computing systems has become increasingly critical. This symposium provides a forum for countries around the Pacific Rim and other areas of the world to exchange ideas for improving the dependability of computing systems.

PRDC 2015 has attracted high-quality research papers which highlight the foundational work that strives to push beyond the limits of existing technologies, including experimental efforts, innovative systems, and investigations that identify weakness in existing dependable and fault-tolerant computing technology.

Many individuals have contributed to the success of this international conference. We would like to express our special appreciation to Prof. Takashi Nanya and Prof. Yennun Huang, the Steering Committee Chairs, for giving us the opportunity to hold this prestigious conference and for their guidance on the conference organization. Special thanks to the Program Chairs, Prof. Dong Xiang and Prof. Tatsuhiro Tsuchiya, for their outstanding work on the technical program. Thanks also to the Fast Abstract Chair, Prof. Masayuki Arai, the Industrial Track Chair, Prof. Peter Mueller and the Poster Chair, Prof. Xiangjian (Sean) He, for their excellent work in organizing the attractive forums and symposia. Thanks also to Publicity Chairs, Prof. Scott Fowler, Dr. Md. Zakirul Alam Bhuiyan, Dr. Hiroshi Yamada, and Prof. Kuan-Ching Li, for their great job in publicizing this event frequently and widely. We would like to give our thanks to all the members of the Organizing Committee and Program Committee members and External Reviewers for their efforts and support. We would also like to thank Prof. Qingping Zhou, the Local Arrangement Chair, who has provided a lot of convenience to us to organize this great event smoothly. We would also like to give our thanks to Keynote Speakers, Prof. Kazuhiko Iwasaki, Prof. Sean He, and Prof. John C.S. Lui, who will be offering insightful and prospective talks to all our attendees. Last but not the least important, we would like to thank all authors who submitted their papers to this conference, and we hope that you will be able to attend this wonderful event!

We are grateful to all of you for participating in PRDC 2015, and we hope that you will find the conference stimulating and constructive and at the same time enjoy the beautiful city, Zhangjiajie, in China!

General Co-Chairs
Guojun Wang, Central South University, China
Sy-Yen Kuo, National Taiwan University, Taiwan
Welcome Messages from PRDC 2015 Program Co-Chairs

We cordially welcome you to the 21st IEEE Pacific Rim International Symposium on Dependable Computing (PRDC 2015). For more than two decades PRDC has been a leading symposium in the Pacific Rim region for researchers and developers in the area of dependable computing.

This year we had an unprecedented number of submissions: From a total of 114 submissions, we selected 41 regular papers through a rigorous reviewing process. We are extremely grateful to all the members of the program committee and external reviewers for their care and diligence for quality reviews. We further thank the four keynote speakers who kindly accepted our invitations. The technical program also includes one industry track paper, four fast abstracts and three poster papers.

PRDC 2015 would not be possible without the hard work of many people. We wish to express our gratitude to all those who took part in the symposium.

Program Co-Chairs
Dong Xiang, Tsinghua University, China
Tatsuhiro Tsuchiya, Osaka University, Japan
Keynote 1: Improvement of Shipped Product Quality Level for Logic VLSIs Based on Semiconductor Chip Layout

Speaker: Prof. Kazuhiko Iwasaki, Tokyo Metropolitan University, Japan
Chair: Tatsuhiro Tsuchiya, Osaka University, Japan
09:30-10:15, November 18, 2015 (Wednesday)

About the Keynote Speaker

Kazuhiko Iwasaki received B.E. degree in 1977, M.E. Degree in 1979, and Ph. D. degree in 1988, all in information and computer sciences from Osaka University. He joined Hitachi’s Central Research Laboratory in 1979. From 1990 to 1995 he was an associate professor at Chiba University. Presently, he is a professor of Tokyo Metropolitan University. His research interests include VLSI testing and dependable networking. He is a fellow of the IEICE, a senior member of the IEEE, and a member of the IPSJ.

Summary:

The new technique to improve the shipped product quality level (SPQL) is shown for logic VLSIs. It calculates the weighted fault coverage based on the critical area (CA) of the chip layout. The basic idea behind is that physical defects occur dependently not only of the logical connection but also of the chip layout. In other words, how the net-list is laid out affects the defect level. As a result, detecting a fault with a bigger CA earns bigger fault coverage. By applying the method we can achieve a better SPQL. In addition, the technique proposed can reduce the amount of test patterns to attain the required defect level, resulting in lower test cost. The open defect CA as a function of fan-outs is also compared with rectilinear minimum Steiner tree.
Keynote 2: Detection of Denial-of-Service Attacks Based on Computer Vision Techniques

Speaker: Prof. Sean He, University of Technology, Sydney (UTS), Australia
Chair: Guojun Wang, Central South University, China
08:30-09:15, November 19, 2015 (Thursday)

About the Keynote Speaker

Xiangjian (Sean) He, as a Chief Investigator has received various research grants including four national Research Grants awarded by Australian Research Council (ARC). He is the Director of Computer Vision and Recognition Laboratory at the Global Big Data Technologies Centre (GBDTC) and a leader of Network Security research team at the Centre for Research Information Networks (CRIN) at the University of Technology, Sydney (UTS). He is an IEEE Senior Member and an IEEE Signal Processing Society Student Committee member. He has been awarded ‘Internationally Registered Technology Specialist’ by International Technology Institute (ITI). He has been carrying out research mainly in the areas of image processing, network security, pattern recognition and computer vision in the last two decades. In recent years, he has many high quality publications in IEEE Transactions journals such as IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Reliability, and IEEE Transactions on Consumer Electronics.

Summary:

Detection of Denial-of-Service (DoS) attacks has attracted researchers since 1990s. A variety of detection systems has been proposed to achieve this task. Unlike the existing approaches based on machine learning and statistical analysis, the proposed system treats traffic records as images and detection of DoS attacks as a computer vision problem. A multivariate correlation analysis approach is introduced to accurately depict network traffic records and to convert the records into the respective images. The images of network traffic records are used as the observed objects of our proposed DoS attack detection system, which is developed based on a widely used dissimilarity measure, namely Earth Mover’s Distance (EMD). EMD takes cross-bin matching into account and provides a more accurate evaluation on the dissimilarity between distributions than some other well-known dissimilarity measures. These unique merits facilitate our proposed system with effective detection capabilities. To evaluate the proposed EMD-based detection system, ten-fold cross-validations are conducted using KDD Cup 99 data set and ISCX 2012 IDS Evaluation data set. The results presented in the system evaluation section illustrate that our detection system can detect unknown DoS attacks and achieves 99.95% detection accuracy on KDD Cup 99 data set and 90.12% detection accuracy on ISCX 2012 IDS evaluation data set with processing capability of approximately 59,000 traffic records per second.
Keynote 3: The Shapley Value: Its Use and Implications on Internet Economics

Speaker: Prof. John C.S. Lui, Fellow of ACM, Fellow of IEEE, The Chinese University of Hong Kong, Hong Kong
Chair: Dong Xiang, Tsinghua University, China
08:30-09:15, November 20, 2015 (Friday)

About the Keynote Speaker

John C.S. Lui is currently the Choh-Ming Li Chair Professor at the Chinese University of Hong Kong. He is a fellow of ACM, fellow of IEEE and the senior research fellow of the Croucher Foundation. His research interests are in network science, Internet, network/system security, network economics and performance evaluation theory.

Summary:

Within the current Internet, autonomous ISPs implement bilateral agreements, with each ISP establishing agreements that suit its own local objective to maximize its profit. Peering agreements based on local views and bilateral settlements, while expedient, encourage selfish routing strategies and discriminatory interconnections. From a more global perspective, such settlements reduce aggregate profits, limit the stability of routes, and discourage potentially useful peering/connectivity arrangements, thereby unnecessarily balkanizing the Internet. We show that if the distribution of profits is enforced at a global level, then there exist profit-sharing mechanisms derived from the coalition games concept of Shapley value and its extensions that will encourage these selfish ISPs who seek to maximize their own profits to converge to a Nash equilibrium. We show that these profit sharing schemes exhibit several fairness properties that support the argument that this distribution of profits is desirable. In addition, at the Nash equilibrium point, the routing and connecting/peering strategies maximize aggregate network profits, encourage ISP connectivity so as to limit balkanization.
Computer systems (e.g., digital sensors, networks, and smart devices) are now available anytime, anywhere, by different means, and are distributed unobtrusively throughout everyday environments in which physical objects/artifacts embedded with invisible computers are sensible and networked locally and globally. The rapid development of the computer systems with their extensive use is leading to the creation of huge collections of data, and coins the term Big Data. Big Data is characterized by the integration of a significant amount of data, of varying modalities or types, at a pace that cannot be handled by traditional data management systems. Since huge amounts of data in unstructured and semi-structured forms are being generated from various sources, new systems, frameworks and methodologies are being designed and developed for data management and data analytics. Although tremendous efforts are being given to these big systems, there is no doubt that they must be “dependable.”

In the last few years, cloud computing has grown from being a promising business concept to one of the fastest growing segments of the IT industry. Cloud computing enables computing systems/resources to be provided as IT services in a pay-as-you-go fashion. The services can be achieved with high efficiency and effectiveness only if the systems are ‘dependable.’ Among various circumstances, dependability can be affected by the open environment with very limited user-side control in Cloud. As a result, “dependability” is going to be one of the most concerned issues for Cloud computing. It is also a great challenge for Big Data together with Cloud. Future systems need to close the dependability gap in face of challenges in different circumstances. The emphasis will be on differing properties of such services, e.g., continuity, effective performance, real-time responsiveness, ability to overcome data fault/corruption/anomaly, ability to avoid failures, prevention of deliberate privacy intrusions, reliability/availability/adaptability/security/safety, and so on. While information society, commercial and scientific companies, and industries share the need for massive throughput, “dependability” of service becomes a big concern.

The aim of this panel discussion is to discuss various aspects and open ideas, explore key open issues, and investigate technology enablers to motivate future research of dependability in Big Data and Cloud computing.

**Panelists:**
Prof. Takashi Nanya, Canon, Japan
Prof. Jemal Abawajy, Deakin University, Australia
Prof. Weijia Jia, Shanghai Jiao Tong University, China
Prof. Yennun Huang, Academia Sinica, Taiwan
A/Prof. Jinjun Chen, University of Technology, Sydney, Australia

**Chairs:**
Prof. Guojun Wang, Central South University, China
Prof. Tatsuhiro Tsuchiya, Osaka University, Japan
Dr. Md Zakirul Alam Bhuiyan, Temple University, USA
“Transformation and Innovation” is one of the main themes of social developments in China. In May 2015, the State Council announced the "Made in China 2025" concept, which indicates that information industry and traditional manufacturing industry will be deeply integrated to make breakthroughs in some key fields; new model and new format will be derived. Nowadays, the opportunities for entrepreneurship and innovation are being open to most people other than only a few individuals. The industry, university, research and application interaction with cooperation of industry, academics and research communities is becoming an important form of the development of science and technology innovation. Participation and collaboration of multiple innovation subjects is one of the important factors that lead to the success of innovation. In this background, higher education in China emphasizes students' spirit of innovation and practical abilities, and it is committed to train innovative talents of science and technology. Due to the traditional education model which emphasizes examination-oriented education, there is a sharp lack of high-quality talents who meet the requirements of the scientific frontier and high-level industrial innovation. The situation becomes more serious in the fields of top-notch science and technology. With the continuously increasing requirements of the economic and social developments on the innovative talents and the continuous deepening of the education reform, some key issues including the integration of educational resources, the optimization of training mode, and other deep-rooted contradictions are becoming more serious. Therefore, it is urgent to resolve contradictions, exploit new methodologies, innovate new technologies, and promote the cooperation of science, technology and education, so as to build a new system of training high-level and innovative talents. The forum invites distinguished professors from well-known universities in China and overseas, and elites officials from enterprises and governments, to discuss these problems together. We are looking forward to the participation of more experts, scholars and personages of various fields. Let us brainstorm for better thoughts and feasible solutions.

Panelists:
Prof. Zhiying Wang, National University of Defense Technology, China
Prof. Dafang Zhang, Hunan University, China
Prof. Keqiu Li, Dalian University of Technology, China
Prof. Yang Xiang, Deakin University, Australia
Prof. Lei Shu, Guangdong University of Petrochemical University, China

Chairs:
Prof. Guojun Wang, Central South University, China
Prof. Kenli Li, Hunan University, China
Prof. Jianquan Ouyang, Xiangtan University, China
SESSIONS AND PAPERS IN PRDC2015

The 21st IEEE Pacific Rim International Symposium on Dependable Computing (PRDC 2015)

Session 1A: Fault Injection and Monitoring, 10:45–12:00, Nov. 18 (Wednesday), Room 1

Chair: Masanori Hashimoto, Osaka University, Japan
FIRED – Fault Injector for Reconfigurable Embedded Devices
Jose Luis Nunes, Tamas Pecserke, Mario Zenha-Rela and Joao Carlos Cunha
NIRVANA: A Non-Intrusive Black-Box Monitoring Framework for Rack-level Fault Detection
Luca Montanari, Roberto Baldoni, Leonardo Querzoni, Claudio Cicchetelli, Federico Lombardi and Leonardo Aniello

Session 1B: Software Aspects of Dependable Computing, 10:45–12:00, Nov. 18 (Wednesday), Room 2

Chair: Okamura Hiroyuki, Hiroshima University, Japan
Cooperative Exceptions for Concurrent Objects
Bruno Cabral, Alcides Fonseca, Paulo Marques and Jonathan Aldrich
Scheduling Independent Tasks with Voltage Overscaling
Aurélien Cavelan, Yves Robert, Hongyang Sun and Frédéric Vivien
A Smart Fuzzing Method for Detecting Heap-Based BufferOverflow inExecutable Codes
Maryam Mouzarani, Babak Sadeghiyan and Mohammad Zolfaghari

Session 2A: Cyber Physical Systems, 14:00–16:05, Nov. 18 (Wednesday), Room 1

Chair: Dong Seong Kim, University of Canterbury, New Zealand
Unifying Dependability of Critical Infrastructures: Electric Power System and ICT (Concepts, Figures of Merit and Taxonomy)
Igor Kaitovic, Slobodan Lukovic and Miroslaw Malek
Cyber-Physical Topology Language - Definition, Operations, and Applications
Carmen Cheh, Gabriel Weaver and William Sanders
Experimental Evaluation of Stealthy Attack Detection in a Robot
Giedre Sabaliauskaite, Geok See Ng, Justin Ruths and A. Mathur

[Industry Track Paper]
Model-Based Cybersecurity Assessment with NESCOR Smart Grid Failure Scenarios
Sumeet Jauhar, Binbin Chen, William G Temple, Xinshu Dong, Zbigniew Kalbarczyk, William H. Sanders and David M. Nicol

Session 2B: Distributed computing, 14:00–16:05, Nov. 18 (Wednesday), Room 2

Chair: Shuming Zhou, Fujian Normal University, China
A Transformational Approach for the Hardening of Region-Adherent Algorithms
Dilshod Rahmatov, Jan Steffen Becker and Oliver Theel
Differentiated Failure Remediation with Action Selection for Resilient Computing
Song Huang, Song Fu, Nathan Debardeleben, Qiang Guan and Cheng-Zhong Xu

Session 3A: Cloud and Web Systems, 16:35–17:50, Nov. 18 (Wednesday), Room 1

Chair: Tatsuhiro Tsuchiya, Osaka University, Japan
Analyzing the Effectiveness of Privacy Related Add-ons Employed to Thwart Web Based Tracking
Matthew Ruffell, Jin B. Hong and Dong Seong Kim

[Poster Paper]
Parasitic Parameters Impacts Investigation on Soft Error Rate by a Circuit Level Framework
Weiguang Sheng, Zhongyuan Zhao and Zhigang Mao
SYNDICATE : Software Infrastructure for Distributed Real-Time System
Eunji Pak, Young-Mok Ha, Jeman Park, Yongyeon Kim, Moonsub Song and Taeho Kim
Session 3B: Recovery and Real-time Computing, 16:35–17:50, Nov. 18 (Wednesday), Room 2
Chair: Mikel Larrea, University of the Basque Country UPV/EHU, Spain
A Method of Self-adaptive Pre-copy Container Checkpoint
Xiao Chen, Jian-Hui Jiang and Qu Jiang
Zheng Junjun, Okamura Hiroyuki and Dohi Tadashi

Session 4A: Sensor Networks, 11:30–12:45, Nov. 19 (Thursday), Room 1
Chair: Satoshi Fukumoto, Tokyo Metropolitan University, Japan
Application-Oriented Sensor Network Architecture for Dependable Structural Health Monitoring
Md Zakirul Alam Bhuiyan, Guojun Wang, Jie Wu, Xiao Fei Xing and Xiangyong Liu
Assessing the Performance of Phantom Routing on Source Location Privacy in Wireless Sensor Networks
Chen Gu, Matthew Bradbury, Arshad Jhumka and Matthew Lecke
Optimizing Sensor Nodes Placement for Fault-tolerant Trilateration-based Localization
Katarina Balac, Mauro Prevostini and Miroslaw Malek

Session 4B: Safety Contracts and other Issues, 11:30–12:45, Nov. 19 (Thursday), Room 2
Chair: Oliver Theel, Carl von Ossietzky University of Oldenburg, Germany
Deriving Hierarchical Safety Contracts
Omar Jaradat and Iain Bate
Using Safety Contracts to Guide the Integration of Reusable Safety Elements within ISO 26262
Irfan Slijvo, Barbara Gallina, Jan Carlson and Hans Hansson
Failure Analyses of Communications Systems and Networks by Publicly Available Failure Information from the viewpoint of Dependability
Koichi Bando, Yutaka Matsumoto and Kenji Tanaka

Session 5A: Dependability Modeling and Analysis, 14:00–15:15, Nov. 19 (Thursday), Room 1
Chair: Xiaofei Xing, Guangzhou University, China
Survivability Quantification of Wireless Ad Hoc Network Taking Account of Border Effects
Zhipeng Yi, Tadashi Dohi and Hiroyuki Okamura
Availability Modeling and Analysis for Software Defined Networks
Tuan Anh Nguyen, Tae Hoon Eom, Seong Mo An, Jin B. Hong, Jong-Sou Park and Dong Seong Kim
A Survey on Data Quality: Classifying Poor Data
Nuno Laranjeiro, Seyma Soydemir and Jorge Bernardino

Session 5B: Systems for Availability, Integrity and Resilience, 14:00–15:15, Nov. 19 (Thursday), Room 2
Chair: Nobuyasu Kanekawa, Hitachi Research Lab., Japan
Design and implementation of a hardware assisted security architecture for software integrity monitoring
Benoît Morgan, Eric Alata, Vincent Nicomette, Mohamed Kaaniche and Guillaume Averlant

[Fast Abstracts]
Bayesian Analysis for Software Reliability with Fault Detection and Correction Data
Lujia Wang, Qingpei Hu and Min Xie.

[Fast Abstracts]
Software Rejuvenation Schemes for Time Warp-based PDES
Satoshi Fukumoto and Mamoru Ohara

Session 6A: Networks and Distributed Systems, 15:45–17:15, Nov. 19 (Thursday), Room 1
Chair: Peter Mueller, IBM Zurich Research, Switzerland
Eventual Leader Election despite Crash-Recovery and Omission Failures
Christian Fernández-Campasano, Mikel Larrea, Roberto Coriñas and Michel Raynal
A Personalized Access Control Based on IoT
Jaejin Jang, Jaekun Moon and Im Jung

Session 6B: Dependable Computer Architectures, 15:45–17:15, Nov. 19 (Thursday), Room 2
Chair: Nuno Laranjeiro, University of Coimbra, Portugal
ARMOR: Adaptive Reliability Management by On-the-fly Redundancy in Multicore Embedded Processors
Farshad Baharvand and Seyed Ghassem Miremadi
Hardware Fault Compensation Using Discriminative Learning
Farah Naz Taher and Joseph Callenes-Sloan

[Fast Abstracts]
A Dual-FPGA Architecture with Rejuvenation for Realtime Applications
Aromhack Saysanasongkham and Satoshi Fukumoto

Session 7A: Dependable Storages, 9:15–10:55, Nov. 20 (Friday), Room 1
Chair: Masato Kitakami, Chiba University, Japan
Combining Low IO-Operations During Data Recovery with Low Parity Overhead in Two-Failure Tolerant Archival Storage Systems
Thomas Schwarz, Ahmed Amer and Jehan-Francois Paris
Failure Recovery Cost Reduction of Disk Arrays Using Adaptive Erasure Correction Coding and Data Compression
Haruhiko Kaneko
A Scalable Optimization Framework for Storage Backup Operations using Markov Decision Processes
Ruofan Xia, Fumio Machida and Kishor Trivedi

Session 8A: Testing and Verification, 11:25–12:40, Nov. 20 (Friday), Room 1
Chair: Dong Xiang, Tsinghua University, China
A Method of Diagnostic Test Generation for Transition Faults
Renji Ono and Satoshi Ohtake
TREBIVETM: A TREe Based Integrity Verification Environment for Non-volatile memory system
Mikio Hashimoto, Naoko Yamada and Jun Kanai
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Quick Links:

SISE of Central South University: http://sise.csu.edu.cn/

Trusted Computing Institute of Central South University: http://trust.csu.edu.cn/
Introduction to School of Software and Service Outsourcing of Jishou University

School of Software and Service Outsourcing of Jishou University is a public full-time second-class undergraduate college in accordance with exemplary software service outsourcing college model, located in the beautiful tourist city---Zhangjiajie. With excellent faculty, advanced practice teaching platform, first-class learning environment for software and information technology outsourcing and other high-tech industries, the school has created senior software quality talents with solid basic knowledge of software engineering, excellent software development technique, skilled experienced software engineering practices, and software engineering comprehensive quality.

The school adheres to the development idea of "emphasizing engineering education, highlighting the application-oriented institute”. It has established the talent cultivation positioning of "training the senior software engineers within the industry, facing the country, and serving the world". Through school-enterprise cooperation, Sino-foreign cooperation, the combination of government-industry-study-research, the school has high academic, rich engineering experienced, stable professional teachers, including 8 professors, 15 PhD, 35 senior software engineers, and project managers. The school has the dominant course laboratory jointly built by central and local government, the appropriated fund laboratory through the program of the central government supporting the development of the local university, Hunan province training base for service outsourcing talents, joint school-enterprise training center for software engineering, the training base for software engineering college students designated by the Ministry of Education, and other high-level modern practice teaching platform, the laboratory owns 1340 sets of equipment, with a total value of about RMB18 million.

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