June 9, 2010 (Wednesday)

8:00–8:30  Registration
8:30–10:00  Opening Session and Keynote I

SSIRI Steering Committee Chairs: Sam Keene & W. Eric Wong
SSIRI 2010 General Chair: Jin Song Dong
SSIRI 2010 Program Chairs: Jun Sun, Ravi Madipadaga, Dianxiang Xu

Presentation of Best Paper Award

Keynote: Once more, with meaning: A Grand Challenge in Informatics
Professor Jim Davies, University of Oxford, UK

10:00–10:30  Coffee Break
10:30–12:00  Session 1A: Safety & Anomaly Detection
  • Recent Catastrophic Accidents: Investigating How Software Was Responsible
    W. Eric Wong, Vidroha Debroy, Adithya Surampudi, HyeonJeong Kim, and
    Michael F. Siok
  • Modeling and Verification of Safety Critical Systems: A Case Study on Pacemaker
    Luu Anh Tuan and Man Chun Zheng
  • Discovering Anomalies in Semantic Web Rules
    Yuzhang Feng

10:30–12:00  Session 1B: Model Checking & Verification
  • Model Checking a Lazy Concurrent List-Based Set Algorithm
    Shaojie Zhang and Yang Liu
  • YAWL2DVE: An Automated Translator for Workflow Verification
    Fazle Rabbi, Hao Wang and Wendy MacCaull
  • Scalable V&V Effort Estimation for Ultra-Large-Scale Systems
    Christof Budnik, Rajesh Subramanayan and Raj Tanikella

10:30–12:00  Session 1C: Security Requirements (Invited Session)
  • Aligning Security Requirements and Security Assurance using the Common Criteria
    Kenji Taguchi, Nobukazu Yoshioka, Takayuki Tobita and Hiroyuki Kaneko
  • An Agent-based System to Support Assurance of Security Requirements
    Moussa Ouedraogo, Haralambos Mouratidis, Djamel Khadraoui and Eric Dubois
  • Model-based Argument Analysis for Evolving Security Requirements
    Thein Than Tun, Yijun Yu, Charles Haley and Bashar Nuseibeh

12:00–13:30  Lunch
13:30–15:00  Keynote II

Defining, Securing, and Standardizing Cloud Computing
Dr. Tim Grance, National Institute of Standards and Technology, USA

15:00–15:30  Coffee Break
15:30–17:30  **Session 2A: Software Reliability**
- *A Methodology for Software Reliability Risk Assessment*
  Jian Xu, Han Yan and Manwu Xu
- *Failure Type-Aware Reliability Assessment with Component Failure Dependency*
  Atef Mohamed and Mohammad Zulkernine
- *Software Reliability Modeling with Integrated Test Coverage*
  Jinxia An and Jihong Zhu
- *Sensitivity of Coverage-Based Software Reliability Models to Variations in the Operational Profile*
  Odair Silva, Adalberto Crespo, Marcos Chaim and Mario Jino

15:30–17:30  **Session 2B: Software Testing I**
- *A Formal Framework for Mutation Testing*
  Fevzi Belli and Mutlu Beyazit
- *An Industrial Case Study on Speeding up User Acceptance Testing by Mining Execution Logs*
  Zhen Ming Jiang, Alberto Avritzer, Emad Shihab, Ahmed E. Hassan and Parminder Flora
- *PhishTester: Automatic Testing of Phishing Attacks*
  Hossain Shahriar and Mohammad Zulkernine
- *A Decompositional Approach to Automatic Test Case Generation Based on Formal Specifications*
  Shaoying Liu and Shin Nakajima

15:30–17:30  **Session 2C: Quality Improvement**
- *Availability Improvement in Virtualized Multiple Servers with Virtualization and Software Rejuvenation*
  May Tar Hla Myint
- *Traceability Enhancement Technique through the Integration of Software Configuration Management and Personal Working Environment*
  Dae-Yeob Kim and Cheong Youn
- *Recoverability of Erasure Codes based and Intensively Written Storage Systems*
  Xiangyu Luo and Yun Wang
- *Towards a New Understanding of Advice Interference*
  Kun Tian, Kendra Cooper, Kang Zhang, Yan Tang and Siyuan Liu

18:00–20:00  **Conference Reception**

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June 10, 2010 (Thursday)

8:00–8:30  **Registration**
8:30–10:00  **Keynote III**

*Software Verification via Separation Logic*
Professor Wei-Ngan Chin, National University of Singapore

10:00–10:30  **Coffee Break**
10:30–12:00 **Session 3A: Software Testing II**
- Self-Checked Metamorphic Testing of an Image Processing Program
  Junhua Ding
- Testing Effort Dependent Software FDP and FCP Models with Consideration of Imperfect Debugging
  Rui Peng, Qingpei Hu, Szuhui Ng and Min Xie
- Towards Scalable Robustness Testing
  Fevzi Belli, Axel Hollmann and W. Eric Wong

10:30–12:00 **Session 3B: Modeling & Analysis**
- Modeling and Analyzing Timed Security Protocols Using Extended Timed CSP
  Xian Zhang, Yang Liu and Mikhail Auguston
- Modeling Uncertainties in the Estimation of Software Reliability – A Pragmatic Approach
  Senthil Kumar Chandran, Aleksandar Dimov and Sasikumar Punnekkat
- The ‘Best’ Valid Safe Protocol Converter
  Jing Cao and Albert Nymeyer

12:00–13:30 **Lunch**

13:30–15:00 **Section 4A: Workshop on Model-based Verification and Validation I**
- Design Patterns for Integrating Variability in Timed Automata
  Ralf Mitsching and Carsten Weise
- Towards Test Case Generation for Synthesizable VHDL Programs Using Model Checker
  Tolga Ayav, Tugkan Tuglular and Fevzi Belli
- Modeling Efficient Multi-chained Stream Signature Protocol using Communicating Sequential Processes
  Ahmet Koltuksuz, Murat Ozkan and Burcu Kulahcioglu

13:30–15:00 **Section 4B: Workshop on Model Checking Secure and Reliable Systems I**
- Classification of Static Analysis-based Buffer Overflow Detectors
  Hossain Shahriar and Mohammad Zulkernine
- Formal Analysis for Stateflow Diagrams
  Chunqing Chen
- Job-Shop Scheduling Problems using Timed Planning
  Xian Zhang

13:30–15:00 **Session 4C: Student Doctoral Program I**
- A Hybrid Approach Combining Petri Nets and Product Lifecycle Management to Simulate, Determine and Validate the Performance of Flexible Manufacturing Systems
  Fernando Solis and Hector Simon Vargas
- An Automatic Approach to Model Checking UML State Machines
  Shao Jie Zhang and Yang Liu
- An Automatic Approach To Verify Sensor Network Systems
  Zheng Manchun

15:00–15:30 **Coffee Break**
15:30–17:30  **Section 5A: Workshop on Model-based Verification and Validation II**
- *Event- and Coverage-Based Testing of Web Services*
  André T. Endo, Michael Linschulte, Adenilso S. Simão and Simone R. S. Souza
- *Generalized Partial Test Case Generation Method*
  Lehilton Lelis Chaves Pedrosa and Arnaldo Vieira Moura
- *Are Longer Test Sequences Always Better? – A Reliability Theoretical Analysis*
  Fevzi Belli, Michael Linschulte and Nevin Güler
- *Utilization of Timed Automata as a Verification Tool for Security Protocols*
  Ahmet Koltuksuz, Burcu Kulaçlıoglu and Murat Ozkan

15:30–17:30  **Section 5B: Workshop on Model Checking Secure and Reliable Systems II**
- *Quantitative Evaluation of Related Web-based Vulnerabilities*
  Deepak Subramanian, Ha Thanh Le, Peter Kok Keong Loh and Annamalai Benjamin Premkumar
- *Using Tree as Hash-Table in Model Checking*
  Truong Khanh Nguyen
- *Verifying Safety Property With PRISM*
  Xiaocheng Ge
- *Yet Another Model Checker for PROMELA - the Transformation Approach*
  Wendi Zhao

15:30–17:30  **Section 5C: Fast Abstract**
- *An Efficient Method of Probabilistic Model Checking*
  Songzheng Song
- *Constraint Checking for XML-based Language Specification by SAT Solver*
  Hao Xiao, Zheng Wang and Geguang Pu
- *Implementing High Performance Lexical Analyzer using CELL Broadband Engine Processor*
  Umarani Srikanth
- *Model Checking C# Code: A Translation Approach*
  Huiquan Zhu
- *Structure Assurance Case Methodology for Assessing Software Trustworthiness*
  Elizabeth Fong, Frederick Boland, Michael Kass and Thomas Rhodes
- *The Problem of Usable Binary Authentication*
  Yongzheng Wu and Roland Yap
- *Towards Verification of a Service Orchestration Language*
  Tian Huat Tan

18:00–20:00  **Conference Banquet**

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**June 11, 2010 (Friday)**

8:30–10:00  **Keynote IV**

*Modeling and Implementing Complex Systems with Timebands*
Professor Jim Woodcock, University of York, UK
10:00–10:30  Coffee Break

10:30–12:00  Session 6A: Workshop on Model Checking Secure and Reliable Systems III
- Modeling and Verification of Transmission Protocols: A Case Study on CSMACD Protocol
  Ling Shi
- MAFSE: A Model-based Framework for Software Verification
  Tho Quan, Duc Hoang, Binh Nguyen, An Nguyen, Quan Tran, Phung Nguyen and Thang Bui
- Modeling and Verifying Security Protocols using PAT Approach
  Luu Tuan

10:30–12:00  Section 6B: Student Doctoral Program II
- An Approach to Achieving the Reliability in TV Embedded System
  Dusica Marijan, Nikola Teslic, Vukota Pekovic and Tarkan Tekcan
- Modeling and Analysis of Advanced Automotive ECU Architectures at Early Design Stages using EMF and Model Transformation
  Christoph Lauer

12:00–12:30  Closing Session & End of SSIRI 2010