SERE 2012 Tentative program

Wednesday, June 20, 2012	
08:30~09:00	**Registration**
09:00~09:10	**Opening** Steering Committee (co-Chair) – W. Eric Wong General Chair – Jeffrey Voas Program Chair – Shiuhpyng Winston Shieh
09:10~10:10	**Keynote Speech I** Virgil Gligor – Towards a Theory of Trust in Networks of Humans and Computers
10:10~10:30	**Coffee Break**

10:30~12:00
Room 1
	Session 1A: Software Reliability
	• *A Control Flow Representation for Component-Based Software Reliability Analysis*
	  Atef Mohamed, and Mohammad Zulkernine
	  Queen's University, Canada
	• *Applying Microreboot to System Software*
	  Michael Le, and Yuval Tamir
	  University of California, Los Angeles, USA
	• *Software Fault Localization using DStar (D*)*
	  W. Eric Wong[1], Vidroha Debroy[2], Yihao Li[1] and Ruizhi Gao[1]
	  [1]University of Texas at Dallas, USA
	  [2]Microsoft Corporation, USA

10:30~12:00
Room 2
	Session 1B: MaSST Workshop I
	• MaSST Keynote: Standards for Testing?
	  Stuart Reid
	  Testing Solutions Group, UK
	• Validating Measures (Discussion Session)
	  Paul Black (Moderator)
	  National Institute of Standards and Technology, USA
	• Paradigm in Verification of Access Control
	  Jeehyun Hwang
	  North Carolina State University, USA

10:30~12:00
Room 3
	Session 1C: IA Workshop I
	• *Towards a Model Based Security Testing Approach of Cloud Computing Environments*
	  Philipp Zech[1], Michael Felderer[1,] and Ruth Breu[2]
	  [1]University of Innsbruck, Austria
	  [2]Research Group Quality Engineering, Austria
	• *Designing System Security with UML Misuse Deployment Diagrams*
	  Susan Lincke, Timothy Knautz, and Misty Lowery
	  University of Wisconsin–Parkside, USA
	• *A Proposal to Prevent Click–Fraud Using Clickable CAPTCHAs*
	  Rodrigo Alves Costa, Ruy J. G. B. de Queiroz, and Elmano Ramalho Cavalcanti
	  University Federal de Campina Grande, Brazil

12:00~13:00	**Lunch Break**
13:00~14:00	**Invited Talk** Philip Laplante – Safe and Secure Software Systems and the Role Professional Licensure

14:00~15:00
Room 1
	Session 2A: System Security
	• *Automatic Simplification of Obfuscated JavaScript Code: A Semantics–Based Approach*
	  Gen Lu and Saumya Debray
	  University of Arizona, USA
	• *Flexible Data–Driven Security for Android*
	  Denis Feth[1], and Alexander Pretschner[2]
	  [1]Fraunhofer Institute for Experimental Software Engineering, Germany
	  [2]Karlsruhe Institute of Technology, Germany

14:00~15:00
Room 2
	Session 2B: MaSST Workshop II
	• Why Fuzzing (Still) Works
	  Allen D. Householder
	  CERT
	• Viewpoint based Test Architecture Design
	  Yasuharu Nishi
	  University of Electro-Communications, Japan

14:00~15:00
Room 3
	Session 2C: IA Workshop II
	• *Comparing Static Security Analysis Tools Using Open Source Software*
	  Ryan McLean
	  Air Force Institute of Technology, USA
	• *Undesirable Aspect Interactions: a Prevention Policy for Three Aspect Fault Types*
	  Arsène Sabas[1], Subash Shankar[2], Virginie Wiels[3], and Michel Boyer[1]
	  [1]Université de Montréal, Canada
	  [2]City University of New York, USA
	  [3]Onera – the French Aerospace Lab, France

15:00~15:30	**Coffee Break**

15:30~17:00
Room 1
	Session 3A: Quality Analysis
	• *An Autonomic Framework for Integrating Security and Quality of Service Support in Databases*
	  Firas Alomari and Daniel Menasce
	  George Mason University, USA
	• *VRank: A Context–Aware Approach to Vulnerability Scoring and Ranking in SOA*
	  Jianchun Jiang[1], Liping Ding[1], Ennan Zhai[1], and Ting Yu[2]
	  [1]Chinese Academy of Sciences, China
	  [2]North Carolina State University, USA
	• *Security Impacts of Virtualization on a Network Testbed*
	  Yu Lun Huang, Borting Chen, Ming Wei Shih, and Chien Yu Lai
	  National Chiao Tung University, Taiwan

15:30~17:00
Room 2
	Session 3B: MaSST Workshop III
	• Gaps in and Roadmap for Measures and Standards in Software Testing (Discussion Session)
	  Elizabeth Fong (Moderator)
	  National Institute of Standards and Technology, USA
	• Software Testing of Business Applications
	  Vijay Sampath
	  Tata Consultancy Services, India
	• Lessons Learned and Next Steps

15:30~17:00
Room 3
	Session 3C: IA Workshop III
	• *Revising a Security Tactics Hierarchy through Decomposition, Reclassification, and Derivation*
	  Jungwoo Ryoo[1], Phillip Laplante[1], and Rick Kazman[2]
	  [1]Penn State University, USA
	  [2]University of Hawaii, USA
	• *Enforcement of Role Based Access Control in Social Network Environments*
	  Junhua Ding[1] and Lian Mo[2]
	  [1]East Carolina University, USA
	  [2]Citrix Systems, USA
	• *Mapping of Security Concerns in Design to Security Aspects in Code*
	  Chase Baker and Michael Shin
	  Texas Tech University, USA

17:00~19:00	**Conference Reception**

Thursday, June 21, 2012	
09:00~10:00	**Keynote Speech II** Stephen S. Yau – Human Factors in Development of Trustworthy Service-based Systems
10:00~10:30	**Coffee Break**

10:30~12:00
Room 1
	Session 4A: Verification & Validation
	• *CRAX: Software Crash Analysis for Automatic Exploit Generation by Modeling Attacks as Symbolic Continuations*
	  Shih-Kun Huang, Po-Yen Huang, Min-Hsiang Huang, Chung-Wei Lai, Han-Lin Lu, and Wai-Meng Leong
	  National Chiao Tung University, Taiwan
	• *A Study of Using Two-Parameter Generalized Pareto Model to Analyze the Fault Distribution of Open Source Software*
	  Chih-Song Kuo, Chin-Yu Huang, and Shao-Pu Luan
	  National Tsing Hua University, Taiwan
	• *DESERVE: A Framework for Detecting Program Security Vulnerability Exploitations*
	  Amatul Mohosina, and Mohammad Zulkernine
	  Queen's University, Canada

10:30~12:00
Room 2
	Session 4B: Safety & Validation
	• *On the Effective Use of Security Test Patterns*
	  Ben Smith, and Laurie Williams
	  North Carolina State University, USA

	• *Toward Systematic Construction of Timing Diagrams from UML/MARTE Behavioral Models for Time-Triggered Embedded Software* Jinho Choi, Eunkyoung Jee, and Doo-Hwan Bae Korea Advanced Institute of Science and Technology, Korea • *A Precise Information Flow Measure from Imprecise Probabilities* Sari Haj Hussein Aalborg University, Denmark
10:30~12:00 Room 3	**Session 4C: IA Workshop IV** • *Scalable Software Testing for Android: Challenges & Opportunities* (*Invited Talk*) Angelos Stavrou George Mason University, USA • *Secure PC Platform Based on Dual-Bus Architecture* Hesham El Zouka Arab Academy for Science, Technology & Maritime Transport, Egypt
12:00~13:00	**Lunch Break**
13:00~14:00	**Invited Talk** Karama Kanoun – Software Dependability Assessment: A Reality or A Dream
14:00~15:00 Room 1	**Session 5A: Algorithm & Measurement** • *Using Weighted Attributes to Improve Cluster Test Selection* Yabin Wang, Zhenyu Chen, Yang Feng, Bin Luo, and Yijie Yang Nanjing University, China • *Mobile Application and Device Power Usage Measurements* Rahul Murmuria[1], Jeffrey Medsger[1], Angelos Stavrou[1], and Jeffrey Voas[2] [1]George Mason University, USA [2]National Institute of Standards and Technology, USA
14:00~15:00 Room 2	**Session 5B: Reliability Improvement** • *Specification-guided Golden Run for Analysis of Robustness Testing Results* Gizelle Lemos and Eliane Martins University of Campinas, Brazil • *Extending the Reliability of Wireless Sensor Networks through Informed Periodic Redeployment* Luiz Laranjeira, and Genaína Nunes Rodrigues Universidade de Brasília, Brazil
14:00~15:00 Room 3	**Session 5C: IA Workshop V** • *A Privacy Preserving Smart Metering System Supporting Multiple Time Granularities* Hsiao Ying Lin, Shiuan Tzuo Shen, and Bao-Shuh P. Lin National Chiao Tung University, Taiwan • *An Investigation of Classification-Based Algorithms for Modified Condition/ Decision Coverage Criteria* Jun-Ru Chang[1], Chin-Yu Huang[2], and Po-Hsi Li[2] [1]Realtek Semiconductor Corporation, Taiwan [2]National Tsing Hua University, Taiwan
15:00~15:30	**Coffee Break**
15:30~17:00 Room 1	**Session 6A: Software Testing** • *Finding Buffer Overflow Inducing Looops in Binary Executables* Sanjay Rawat and Laurent Mounier VERIMAG, France • *Accelerating Taint-based Concolic Testing by Pruning Pointer Overtaint* Yun Min Cheng, Bing Han Li ,and Shiuhpyng Shieh National Chiao Tung University, Taiwan • *uTIL: Mutation-based Statistical Test Inputs Generation for Automatic Fault Localization* Mickaël Delahaye[1], Lionel Briand[2], Arnaud Gotlieb[3], and Matthieu Petit[4] [1]Université Joseph Fourier, France [2]Simula Research Laboratory, Norway [3]Institut National de Recherche en Informatique et en Automatique, France [4]Institut de Recherche en Informatique et Systèmes Aléatoires, France
15:30~17:00 Room 2	**Session 6B: Reliability Analysis I** • *An Embedded Software Reliability Model with Consideration of Hardware Related Software Failures* Jinhee Park[1], Hyeonjeong Kim[1], Juhwan Shin[2], and Jongmoon Baik[1] [1]Korea Advanced Institute of Science and Technology, Korea [2]Agency for Defense Development, Korea • *Robust Wavelet Shrinkage Estimation without Data Transform for Software Reliability Assessment* Xiao Xiao, and Tadashi Dohi Hiroshima University, Japan

15:30~17:00 Room 3	**Session 6C: MVV workshop** • *Testing is an Event-Centric Activity* Fevzi Belli, Mutlu Beyazıt, and Atif Memon University of Maryland, USA • *Cost Reduction Through Combining Test Sequences With Input Data* Benedikt Krueger and Michael Linschulte University of Paderborn, Germany
17:00~18:00	**Tour to the Hall of Standards**
18:00~20:30 Heritage Room	**Conference Banquet**

Friday, June 22, 2012	
09:00~10:00	**Keynote Speech III** Huimin Lin – Checking Safety Properties of Concurrent Programs
10:00~10:30	**Coffee Break**
10:30~12:00 Room 1	**Session 7A: Access Control & Authentication** • *A Secure Fine-Grained Access Control Mechanism for Networked Storage Systems* Hsiao Ying Lin[1], John Kubiatowicz[2] and Wen Guey Tzeng[1] [1]National Chiao Tung University, Taiwan [2]University of California Berkeley, USA • *Mitigating Insider Threat without Limiting the Availability in Concurrent Undeclared Tasks* Qussai Yaseen, and Brajendra Panda University of Arkansas, USA • *A New Non-Intrusive Authentication Method based on the Orientation Sensor for Smartphone Users* Chien-Cheng Lin[1], Chin-Chun Chang[1], Deron Liang[2], and Ching-Han Yang[2] [1]National Chiao Tung University, Taiwan [2]University of California Berkeley, USA
10:30~12:00 Room 2	**Session 7B: Student Doctoral program I** • *Virtual Machine Replay Update: Improved Implementation for Modern Hardware Architecture* Jiageng Yu, Peng Zhou, Yanjun Wu, and Chen Zhao Chinese Academy of Sciences, China • *Integrating Network Cryptography into the Operating System* Anthony Gabrielson and Haim Levkowitz University of Massachusetts Lowell, USA • *A Novel Security Scheme for Online Banking Based on Virtual Machine* Bei Guan, Yanjun Wu, and Yongji Wang Chinese Academy of Sciences, China
10:30~12:00 Room 3	**Session 7C: SSCPS Workshop I** • *Lattice-Valued Kripke Structures based on Complete Residuated Lattice* Haiyu Pan, Min Zhang, and Yixiang Chen • *Invalid Pointer Dereferences Detection for CPS software based on Extended Pointer Structures* Longming Dong, Wei Dong, and Liqian Chen • *Modeling and Simulating CAN-based Cyber-Physical Systems in Modelica* Liping Chen, Xiaoping Wang, Xiong Gong, Hongchang Zhang, Fanli Zhou, Bin Gu, and Lei Wang • *A New Approach of Partial Order Reduction Technique for Parallel Timed Automata Model Checking* Xiaoyu Zhou, Qian Li, and Jianhua Zhao
12:00~13:00	**Lunch Break**
13:00~14:00	**Invited Talk** Ji Wang – Formal Modeling, Verification and Refinement of Long Running Transactions
14:00~15:30 Room 1	**Session 8A: Web Security** • *Semi-Automatic Security Testing of Web Applications from a Secure Model* Matthias Büchler, Johan Oudinet, and Alexander Pretschner Karlsruhe Institute of Technology, Germany • *Mining Executable Specifications of Web Applications from Selenium IDE Tests* *Dianxiang Xu[1], Weifeng Xu[2], Bharath Bavikati[2], and Eric Wong[3]* [1]Dakota State University, USA [2]Gannon University, USA [3]University of Texas at Dallas, USA • *Countering Network-Centric Insider Threats Through Self-Protective Autonomic Rule Generation* Faisal Sibai, and Daniel Menasce George Mason University, USA

14:00~15:30 Room 2	**Session 8B: Student Doctoral Program II** • *A Survey of Software Testing in the Cloud,* *Koray İnÇkİ[1], İsmail Ari[2], and Hasan SÖzer[2]* [1]TÜBİTAK BİLGEM Information Technologies Institute, Turkey [2]Özyeğin University, Turkey • *A Novel Method for Modeling Complex Network of Software System Security* Hailin Li, Yadi Wang, and Jihong Han Zhengzhou University, China • *Thinking Towards a Pattern Language for Predicate Based Encryption Crypto-Systems* Jan de Muijnck-Hughes and Ishbel Duncan University of St Andrews, United Kingdom
14:00~15:30 Room 3	**Session 8C: SSCPS Workshop II** • *Bodhi: Detecting Buffer Overflows with a Game* Jie Chen and Xiaoguang Mao • *Study of Safety Analysis and Assessment Methodology for AADL Model* Deming Song, Yunwei Dong, Fan Zhang, Hong Huo, and Bin Gu • *Hazardous Chemicals Vehicles Rollover Pre-warning System Based on CPS* Xuesong Cai and Junwei Wu • *Cyber-physical Systems Modeling Method Based on Modelica* Tang Junjie, Zhao Jianjun, Ding Jianwan, Chen Liping, Xie Gang, Gu Bin, and Yang Mengfei
15:30~16:00	**Coffee Break**
16:00~17:00 Room 1	**Session 9A: Reliability Analysis II** • *Reliability Analysis of PLC Systems by Bayesian Network* Hehua Zhang[1], Yu Jiang[1], Xun Jiao, Xiaoyu Song[2], William Hung[1], and Ming Gu[1] [1]Tsinghua University, China [2]Portland State University, USA • *Detection and Mitigation of Induced Low Rate TCP-targeted Denial of Service Attack* Ferdous Barbhuiya, Vaibhab Gupta, Santosh Biswas, and Sukumar Nandi Indian Institute of Technology Guwahati, India
16:00~17:00 Room 2	**Session 9B: Fast Abstract I** • *Hybrid Bayesian Network Models for Predicting Software Reliability* Mark Blackburn[1] and Benjamin Huddell[2] [1]Stevens Institute of Technology, USA [2]Lockheed Martin Corporation, USA • *A Framework for Automated Security Testing of Android Applications on the Cloud,* Sam Malek, Naeem Esfahani, Thabet Kacem, Riyadh Mahmood, Nariman Mirzaei, and Angelos Stavrou George Mason University, USA • *Path-oriented Test Data Generation Driven by Component Linear Fitting Functions* Wenxu Ding, Xin Chen, Peng Jiang, Nan Ye, Lei Bu, and Xuandong Li Nanjing University, China • *Formal Verification of OSEK/VDX Real-Time Operating System (Empirical Report)* Jianqi Shi, Huixing Fang, Huibiao Zhu, and Xin Ye East China Normal University, China
16:00~17:00 Room 3	**Session 9C: Fast Abstract II** • *Intelligent Biological Security Testing Agents* Ishbel Duncan University of St Andrews, United Kingdom • *Attestation & Authentication for USB Communications* Zhaohui Wang and Angelos Stavrou George Mason University, USA • *Analysis of Android Applications' Permissions* Ryan Johnson[1], Zhaohui Wang[1], Corey Gagnon[2], and Angelos Stavrou[1] [1]George Mason University, USA [2]James Madison University, USA
17:00~17:30	**Closing Session & End of SERE 2012**