

QRS 2017 Session Schedule

Tuesday, July 25, 2017		
08:00 – 09:00	Registration	Foyer
09:00 – 12:30	<ul style="list-style-type: none"> • T1: Data Science and Measurement in Software Reliability Engineering Pete Rotella (Cisco Systems, USA) Sunita Chulani (Cisco Systems, USA) • T3: Network Security – Securing and Breaking Secure Protocols Rudolf B. Blažek (Boxtrap spol. s r.o, Czech Republic) • T5: Mining Application Traces at Scale with Apache Spark Vincent Leroy (University of Grenoble, France) • IoT Workshop 	#301 #347 #302 Krejcar
12:30 – 13:30	Lunch Break	Foyer
13:30 – 17:00	<ul style="list-style-type: none"> • T2: The Bugs Framework (BF) “Hands-On” Irena Bojanova (National Institute of Standards and Technology, USA) • T4: Hardware Security – Breaking Ciphers of Chip Cards Martin Novotný (Czech Technical University in Prague, Czech Republic) Jiří Buček (Czech Technical University in Prague, Czech Republic) • T6: The Correctness-by-Construction Approach to Programming Bruce Watson (Stellenbosch University, South Africa) Ina Schaefer (Technische Universität Braunschweig, Germany) • IoT Workshop (ends on 17:30) 	#301 #347 #302 Krejcar
17:30-19:00	Reception & Mixer	Foyer

Wednesday, July 26, 2017		
07:30 – 08:30	Registration	Foyer
08:30 – 08:40	Opening Ceremony <ul style="list-style-type: none"> Steering Committee Chair: W. Eric Wong (University of Texas at Dallas, USA) General Chairs: <ul style="list-style-type: none"> Mladen Vouk (North Carolina State University, USA) Irena Bojanova (National Institute of Standards and Technology, USA) Program Chairs: <ul style="list-style-type: none"> Manuel Nuñez (Universidad Complutense de Madrid, Spain) Tadashi Dohi (Hiroshima University, Japan) Xiaoying Bai (Tsinghua University, China) 	Kotěra
08:40 – 09:40	<ul style="list-style-type: none"> Keynote Speech I <i>NIST Cybersecurity Research and Development: Thoughts of the Future</i> Matthew Scholl National Institute of Standards and Technology, USA 	Kotěra
09:40 – 10:00	Coffee Break	Foyer
10:00 – 12:05	<ul style="list-style-type: none"> Session I-A: Verification and Validation I (Regular) Session I-B: Fault Localization and Analysis (Regular) Session I-C: Security (Short) Session I-D: Quality by Design (Short) Session I-E: International Contest on Software Testing Session I-F: Industry Track I – Analysis and Modeling I 	Krejcar #112 #113 #152 Janák #153
12:05 – 14:00	Lunch Break Poster Session I	Foyer
14:00 – 15:40	<ul style="list-style-type: none"> Session II-A: Information Assurance I (Workshop) Session II-B: Reliability Modeling and Optimization I (Workshop) Session II-C: Testing of Cyber-Physical Systems in the Cloud (Workshop) Session II-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid I (Workshop) Session II-E: International Contest on Software Testing Session II-F: Industry Track II – Analysis and Modeling II 	Krejcar #112 #113 #152 Janák #153
15:40 – 16:00	Coffee Break	Foyer
16:00 – 17:40	<ul style="list-style-type: none"> Session III-A: Information Assurance II (Workshop) Session III-B: Reliability Modeling and Optimization II (Workshop) Session III-C: Resilience Engineering and Economics I (Workshop) Session III-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid II (Workshop) Session III-E: International Contest on Software Testing Session III-F: Industry Track III – Testing and Inspection 	Krejcar #112 #113 #152 Janák #153
18:00 – 19:30	Conference Reception	Foyer

Thursday, July 27, 2017		
07:30 – 08:30	Registration	Foyer
08:30 – 09:30	<ul style="list-style-type: none"> • Keynote Speech II <i>IoT-Testware – an Eclipse Project</i> Ina Schieferdecker Fraunhofer FOKUS/Technical University Berlin, Germany 	Kotěra
09:30 – 10:00	Coffee Break	Foyer
10:00 – 12:05	<ul style="list-style-type: none"> • Session IV-A: Quality Analytics (Regular) • Session IV-B: Security and Networking (Regular) • Session IV-C: Resilience Engineering and Economics II (Workshop) • Session IV-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid III (Workshop) • Session IV-E: Combinatorial Testing and Its Applications I (Workshop) 	Krejcar #112 #113 #152 #153
12:05 – 14:00	Lunch Break Poster Session II	Foyer
14:00 – 15:40	<ul style="list-style-type: none"> • Session V-A: Verification and Validation II (Short) (14:00 – 16:05) • Session V-B: Panel on Conflicts and Synergies among Quality Requirements • Session V-C: Resilience Engineering and Economics III (Workshop) • Session V-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid IV (Workshop) • Session V-E: Combinatorial Testing and Its Applications II (Workshop) 	Krejcar #112 #113 #152 #153
15:40 – 16:10	Coffee Break	Foyer
16:10 – 19:00	Conference Excursion to Old Town, Prague (Guided Tour)	
19:00 – 21:30	Conference Banquet, Music Performance, and Award Ceremony (Kaiserstein Palace)	

Friday, July 28, 2017		
07:30 – 08:30	Registration	Foyer
08:30 – 09:30	<ul style="list-style-type: none"> • Keynote Speech III <i>Engineering Fine-Grain Dependability Requirements</i> Zhi Jin Peking University, China 	Kotěra
09:30 – 10:00	Coffee Break	Foyer
10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-A: Quality Prediction (Regular) • Session VI-B: Measurement and Management (Short) • Session VI-C: Analysis, Design and Modeling (Student Doctoral Program) • Session VI-D: Human and Social Aspects of Software Quality (Workshop) • Session VI-E: Trustworthy Computing (Workshop) 	Krejcar #112 #113 #152 #153
12:05 – 14:00	Lunch Break Poster Session III	Foyer
14:00 – 15:40	<ul style="list-style-type: none"> • Session VII-A: Safety and Security in Cyber-Physical Systems I (Workshop) • Session VII-B: Fast Abstract I (16 minutes each) • Session VII-C: Software Engineering and Big Data I (Workshop) • Session VII-D: Software Engineering and Knowledge Management I (Workshop) • Session VII-E: Software Cybernetics (Workshop) 	Krejcar #112 #113 #152 #153
15:40 – 16:00	Coffee Break	Foyer
16:00 – 17:40	<ul style="list-style-type: none"> • Session VIII-A: Safety and Security in Cyber-Physical Systems II (Workshop) • Session VIII-B: Fast Abstract II (16 minutes each) • Session VIII-C: Software Engineering and Big Data II (Workshop) • Session VIII-D: Software Engineering and Knowledge Management II (Workshop) 	Krejcar #112 #113 #152

Saturday, July 29, 2017		
09:30 – 11:00	QRS 2018 Planning Meeting (Open to public)	#364

Wednesday, July 26, 2017	
07:30 – 08:30	Registration (Foyer)
08:30 – 08:40	Opening Ceremony Room: Kotěra <ul style="list-style-type: none"> • Steering Committee Chair: W. Eric Wong (University of Texas at Dallas, USA) • General Chairs: Mladen Vouk (North Carolina State University, USA) Irena Bojanova (National Institute of Standards and Technology, USA) • Program Chairs: Manuel Nuñez (Universidad Complutense de Madrid, Spain) Tadashi Dohi (Hiroshima University, Japan) Xiaoying Bai (Tsinghua University, China)
08:40 – 09:40	<ul style="list-style-type: none"> • Keynote Speech I Chair: Irena Bojanova Room: Kotěra <i>NIST Cybersecurity Research and Development: Thoughts of the Future</i> Matthew Scholl National Institute of Standards and Technology, USA
09:40 – 10:00	Coffee Break (Foyer)
10:00 – 12:05	<ul style="list-style-type: none"> • Session I-A: Verification and Validation I (Regular) Chair: W.K. Chan Room: Krejcar <ul style="list-style-type: none"> ○ <i>RESTful API Automated Test Case Generation</i> Andrea Arcuri ○ <i>Which Factor Impacts GUI Traversal-Based Test Case Generation Technique Most?</i> Bo Jiang, Yaoyue Zhang, W.K. Chan, and Zhenyu Zhang ○ <i>Improving Random Test Sets Using a Locally Spreading Approach</i> Xiangyang Huang, LiGuo Huang, Shudong Zhang, Lijuan Zhou, Minhua Wu, and Mingrui Chen ○ <i>Widget-Sensitive and Back-Stack-Aware GUI Exploration for Testing Android Apps</i> Jiwei Yan, Tianyong Wu, Jun Yan, and Jian Zhang ○ <i>Using Off-the-Shelf Exception Support Components in C++ Verification</i> Vladimír Štill, Petr Ročkal, and Jiří Barnat
10:00 – 12:05	<ul style="list-style-type: none"> • Session I-B: Fault Localization and Analysis (Regular) Chair: Hasan Ural Room: #112 <ul style="list-style-type: none"> ○ <i>Improving Spectrum-Based Fault Localization for Spreadsheet Debugging</i> Elisabeth Getzner, Birgit Hofer, and Franz Wotawa ○ <i>A Critical Evaluation of Spectrum-Based Fault Localization Techniques on A Large-Scale Software System</i> Fabian Keller, Lars Grunske, Simon Heiden, Antonio Filieri, Andre van Hoorn, and David Lo ○ <i>Statement-Oriented Mutant Reduction Strategy for Mutation Based Fault Localization</i> Yong Liu, Zheng Li, Linxin Wang, Zhiwen Hu, and Ruilian Zhao

	<ul style="list-style-type: none"> ○ <i>Improving Faulty Interaction Localization Using Logistic Regression</i> Kinari Nishiura, Eun-Hye Choi, and Osamu Mizuno ○ <i>Can Robot Navigation Bugs Be Found in Simulation? An Exploratory Study</i> Thierry Sotiropoulos, H�el�ene Waeselynck, J�er�emie Guiochet, and F�elix Ingrand
10:00 – 12:05	<ul style="list-style-type: none"> ● Session I-C: Security (Short) Chair: Fevzi Belli Room: #113 ○ <i>Towards Automation in Information Security Management Systems</i> Michael Brunner, Christian Sillaber, and Ruth Breu ○ <i>HyDroid: A Hybrid Approach for Generating API Call Traces from Obfuscated Android Applications for Mobile Security</i> Kobra Khanmohammadi, and Abdelwahab Hamou-Lhadj ○ <i>Security Requirements Engineering Using Structured Object-Oriented Formal Language For M-Banking Applications</i> Busalire Onesmus Emeka, and Shaoying Liu ○ <i>Access Control in Water Distribution Networks: A Case Study</i> Sridhar Adepu, Gyanendra Mishra, and Aditya Mathur ○ <i>A Method for Developing Algorithms for Assessing Cyber-Risk Cost</i> Gencer Erdogan, Alejandra Gonzalez, Atle Refsdal, and Fredrik Seehusen
10:00 – 12:05	<ul style="list-style-type: none"> ● Session I-D: Quality by Design (Short) Chair: Heinz Schmidt Room: #152 ○ <i>Engineering Adaptive User Interfaces Using Monitoring-Oriented Programming</i> Aaron John Buhagiar, Gordon J. Pace, and Jean-Paul Ebejer ○ <i>Are Your Classes Well-encapsulated? Encapsulation Analysis for Java</i> Zhenhao Tang, Juan Zhai, Bin Li, and Jianhua Zhao ○ <i>Intersert: Assertions on Distributed Process Interaction Sessions</i> Zack Newsham, Augusto Born de Oliveira, Jean-Christophe Petkovich, Ahmad Saif Ur Rehman, Guy Martin Tchamgoue, and Sebastian Fischmeister ○ <i>Software Reliability as User Perception</i> Felipe Febrero, M Angeles Moraga, and Coral Calero ○ <i>Modeling and Analyzing the Android Permission Framework Using High Level Petri Nets</i> Xudong He
10:00 – 12:05	<ul style="list-style-type: none"> ● Session I-E: International Contest on Software Testing Room: Jan�ak
10:00 – 12:05	<ul style="list-style-type: none"> ● Session I-F: Industry Track I (Analysis and Modeling I) Chair: Sunita Chulani Room: #153 ○ <i>Cybersecurity Economics and Valuation Modeling</i> Invited Talk (10:00 – 10:50) Phil Owen

	<ul style="list-style-type: none"> ○ <i>A Framework for Combining and Ranking Static Analysis Tool Findings Based on Tool Performance Statistics</i> Achilleas Xypolytos, Haiyun Xu, Barbara Vieira, and Amr M.T. Ali-Eldin ○ <i>Software Release-Over-Release Comparisons</i> Pete Rotella and Sunita Chulani ○ <i>REConverter: Transforming Textual Use Cases to High-Level Message Sequence Chart</i> Zuohua Ding
12:05 – 14:00	Lunch Break (Foyer) Poster Session I
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-A: Information Assurance I (Workshop) Chair: Jie Liu Room: Krejcar ○ <i>Context-Aware Adaptation of Mobile Applications Driven by Software Quality and User Satisfaction</i> Mai Abusair, Antinisca Di Marco, and Paola Inverardi ○ <i>Activity-based Model Synchronization and Defects Detection for Small Teams</i> Jakub Ondik, Martin Olejar, Karol Rastocny, and Maria Bielikova ○ <i>Toward Summary Extraction Method for Functional Topic</i> Wenpeng Li, Yingkui Cao, Junfeng Zhao, Yanzhen Zou, and Bing Xie ○ <i>How Domain Knowledge Accumulation Influences Software Defects: An Empirical Analysis</i> Peng Xiao, Bin Liu, Xiaobo Yan, and Fuqun Huang
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-B: Reliability Modeling and Optimization I (Workshop) Chair: Osamu Mizuno Room: #112 ○ <i>An Importance Based Algorithm for Reliability-Redundancy Allocation of Phased Mission Systems</i> Xinyang Wu and Xiaoyue Wu ○ <i>Criticality Analysis Method Based on Integrated Importance Measure</i> Shubin Si, Wenhai He, and Xianzhi Wang ○ <i>Reliability Analysis for A Degradation System Subject to Dependent Soft and Hard Failure Processes</i> Hongda Gao and Lirong Cui ○ <i>Stochastic Comparisons of Used Coherent System and New System of Used Components for Non-Identically Distributed and Dependent Components</i> Rui Fang and Xiaohu Li
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-C: Testing of Cyber-Physical Systems in the Cloud (Workshop) Chair: Yiming Deng Room: #113 ○ <i>Formal Analysis of Control Software for Cyber-Physical Systems</i> Invited Talk (14:00 – 14:50) Peter Herrmann ○ <i>A Candidate Architecture for Cloud-based Monitoring in Industrial Automation</i> (14:50 – 15:15) Ian David Peake and Jan Olaf Blech

	<ul style="list-style-type: none"> ○ <i>A Systematic Mapping Study of Empirical Studies on Software Cloud Testing Methods</i> (15:15 – 15:40) Amro Al-Said Ahmad, Pearl Brereton, and Peter Andras
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid I (Workshop) Chair: Steven Li Room: #152 ○ <i>Rolling Bearing Vibration Signal Analysis Based on Dual-Entropy, Holder Coefficient and Gray Relation Theory</i> Yulong Ying, Jingchao Li, Zhimin Chen, and Jing Li ○ <i>Web Service Reliability Test Method Based on Log Analysis</i> Xuetao Tian, Honghui Li, and Feng Liu ○ <i>Network Anomaly Detection Based on Dynamic Hierarchical Clustering of Cross Domain Data</i> Yang Liu, Hongping Xu, Hang Yi, Zhen Lin, Jian Kang, Weiqiang Xia, Qingping Shi, Youping Liao, and Yulong Ying ○ <i>Research on the Measurement and Transmission Network System of New Launch Vehicle Based on Cloud Computing</i> Yuanyi Liu, Wenming Wang, Jian Kang, Youping Liao, Yang Liu, Qingping Shi, Weiqiang Xia, and Mingyu Hu
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-E: International Contest on Software Testing Room: Janák
14:00 – 15:40	<ul style="list-style-type: none"> ● Session II-F: Industry Track II (Analysis and Modeling II) Chair: Yichen Wang Room: #153 ○ <i>Improving Trace Generation and Analysis for Medical Devices</i> Yoann Blein, Arnaud Clère, Fabrice Bertrand, Yves Ledru, Roland Groz, and Lydie du Bousquet ○ <i>An Integrated Architecture for IoT Fingerprinting</i> Fehmi Jaafar ○ <i>A Black-Box Approach to Latency and Throughput Analysis</i> Daniel Brahneborg, Wasif Afzal, and Adnan Causevic ○ <i>Security Analytics in the Big Data Era</i> Dušan Mondek, Rudolf B. Blažek, and Tomáš Zahradnický
15:40 – 16:00	Coffee Break (Foyer)
16:00 – 17:40	<ul style="list-style-type: none"> ● Session III-A: Information Assurance II (Workshop) Chair: Lirong Cui Room: Krejcar ○ <i>Automated Performance Deviation Detection Across Software Versions Releases</i> (Short paper) Abderrahmane Benbachir, Isnaldo Francisco De Melo jr, Michel Dagenais, and Bram Adams ○ <i>The Failure Behaviors of Multi-faults Programs: An Empirical Study</i> Yan Xiaobo, Liu Bin, and Li Jianxing ○ <i>Predicting Release Reliability</i> Pete Rotella and Sunita Chulani

	<ul style="list-style-type: none"> ○ <i>An Empirical Study on the Usage of SQL Execution Traces for Program Comprehension</i> Nesrine Noughi, Stefan Hanenberg, and Anthony Cleve
16:00 – 17:40	<ul style="list-style-type: none"> ● Session III-B: Reliability Modeling and Optimization II (Workshop) Chair: Shubin Si Room: #112 ○ <i>Circuit Reliability Analysis Using Signal Reliability Correlations</i> Jinchen Cai and Chunhong Chen ○ <i>Residual Life Estimation by Fusing Few Failure Lifetime and Degradation Data from Real-Time Updating</i> Shiqi Liu, Hao Chen, Bo Guo, and Xiang Jia ○ <i>An Object-Oriented Simulation Model for Reliability of PMS with Time Redundancy</i> Xiaoyue Wu and Bo Guo ○ <i>Comparing and Goaling Releases Using Software Reliability Classes (Industry Track)</i> Pete Rotella and Sunita Chulani
16:00 – 17:40	<ul style="list-style-type: none"> ● Session III-C: Resilience Engineering and Economics I (Workshop) Chair: Rosalie McQuaid Room: #113 ○ <i>CsPI: A New Way to Evaluate Cybersecurity Investments</i> Summer Fowler and Peter P. Chen ○ <i>Resilience in Homogeneous Networks: A Strategic Network Formation Approach</i> Babak Heydari ○ <i>Risky Cyber Security: '7012' Regulations Federally-Driven Inhibitor to Resilience within the Defense Industrial Base: A Position Paper</i> Larisa Breton ○ <i>Resilience Mechanism for Trustworthy Workflow Management System</i> Qiang Han
16:00 – 17:40	<ul style="list-style-type: none"> ● Session III-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid II (Workshop) Chair: Guanglu Sun Room: #152 ○ <i>Opportunistic Transmission Mechanism Based on SI in Mobile Crowd Sensing Networks</i> Bing Jia, Shuai Liu, Tao Zhou, and Zhendong Xu ○ <i>Automatic Modulation Recognition of Digital Signals Based on Fisherface</i> Shanshan Jin, Yun Lin, and Hui Wang ○ <i>Evaluation of Lithium Batteries Based on Continuous Hidden Markov Model</i> Yun Lin, Mingyu Hu, Xuhong Yin, Jian Guo, and Zhaojun Li ○ <i>A Distributed Intrusion Detection System for Cognitive Radio Networks Based on Evidence Theory</i> Meiyu Wang, Zhigang Li, and Yun Lin

16:00 – 17:40	<ul style="list-style-type: none"> • Session III-E: International Contest on Software Testing Room: Janák
16:00 – 17:40	<ul style="list-style-type: none"> • Session III-F: Industry Track III (Testing and Inspection) Chair: Tomáš Zahradnický Room: #153 <ul style="list-style-type: none"> ◦ <i>Experiences in Testing and Analyzing Data Intensive Systems</i> Teemu Kanstrén ◦ <i>A Journey from Manual Testing to Automated Test Generation in An Industry Project</i> Claus Klammer and Rudolf Ramler ◦ <i>On Business Drivers for Firmware Test: A Wake-Up Call for Software Engineering Research?</i> Bernhard Peischl ◦ <i>Dynamic Test Selection Using Source Code Changes</i> Matthew Campbell, Kent Martin, Ferenc Bozóki, and Mike Atkinson
18:00 – 19:30	<ul style="list-style-type: none"> • Conference Reception Location: Foyer

Thursday, July 27, 2017	
07:30 – 08:30	Registration (Foyer)
08:30 – 09:30	<ul style="list-style-type: none"> • Keynote Speech II Chair: Franz Wotawa Room: Kotěra <i>IoT-Testware – an Eclipse Project</i> Ina Schieferdecker Fraunhofer FOKUS/Technical University Berlin, Germany
09:30 – 10:00	Coffee Break (Foyer)
10:00 – 12:05	<ul style="list-style-type: none"> • Session IV-A: Quality Analytics (Regular) Chair: Shaoying Liu Room: Krejcar <ul style="list-style-type: none"> ◦ <i>DURFEX: A Feature Extraction Technique for Efficient Detection of Duplicate Bug Reports</i> Korosh Koochekian Sabor, Abdelwahab Hamou-Lhadj, and Alf Larsson ◦ <i>Towards Better Understanding of Software Quality Evolution Through Commit-Impact Analysis</i> Pooyan Behnamghader, Reem Alfayez, Kamonphop Srisopha, and Barry Boehm ◦ <i>The Effect of Gang-of-Four Design Patterns Usage on Design Quality Attributes</i> Shahid Hussain, Jacky Keung, and Arif Ali Khan ◦ <i>On the Analysis of Co-Occurrence of Anti-Patterns and Clones</i> Fehmi Jaafar, Angela Lozano, Yann-Gael Gueheneuc, and Kim Mens

	<ul style="list-style-type: none"> ○ <i>How Do Developers Toggle Breakpoints? Observational Studies</i> Fabio Petrillo, Hyan Mandian, Aiko Yamashita, Foutse Khomh, and Yann-Gael Gueheneuc
10:00 – 12:05	<ul style="list-style-type: none"> ● Session IV-B: Security and Networking (Regular) Chair: H��l��ne Waeselynck Room: #112 ○ <i>FESR: A Framework for Eliciting Security Requirements based on Integration of Common Criteria and Weakness Detection Formal Model</i> Hongbo Li, Xiaohong Li, Jianye Hao, Guangquan Xu, Zhiyong Feng, and Xiaofei Xie ○ <i>Detecting Cross-Site Scripting Vulnerabilities through Automated Unit Testing</i> Mahmoud Mohammadi, Bill Chu, and Heather Richter Lipford ○ <i>Towards Optimally Hiding Protected Assets in Software Applications</i> Leonardo Regano, Daniele Canavese, Cataldo Basile, and Antonio Lioy ○ <i>A Game-Theoretic Based QoS-Aware Capacity Management for Real-time EdgeIoT Applications</i> Suleiman Onimisi Aliyu, Feng Chen, Ying He, and Hongji Yang ○ <i>Using Segment-based Alignment to Extract Packet Structures from Network Traces</i> Othman Esoul and Neil Walkinshaw
10:00 – 12:05	<ul style="list-style-type: none"> ● Session IV-C: Resilience Engineering and Economics II (Workshop) Chair: Jeff Picciotto Room: #113 ○ <i>Cyber Resilience of Complex Systems-of-Systems</i> Invited Talk (10:00-10:50) George Sharkov ○ <i>Examine and Discuss Concepts Raised in the Presented Papers</i> Panel (10:50-12:05) Peter Chen (Moderator), Summer Fowler, Larisa Breton, Robert Cunningham, and Babak Heydari
10:00 – 12:05	<ul style="list-style-type: none"> ● Session IV-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid III (Workshop) Chair: Guigang Zhang Room: #152 ○ <i>Recognition Method of Software Defined Radio Signal Based on Evidence Theory and Interval Grey Relation</i> Hui Wang, Lili Guo, and Yun Lin ○ <i>Portable Safety Voice Information Recording Equipment</i> Sen Wang and Yun Lin ○ <i>A Method for Modulation Recognition Based on Entropy Features and Random Forest</i> Zhen Zhang, Yibing Li, Xiaolei Zhu, and Yun Lin ○ <i>A Biological Image Restoration Method with Independently Local Dictionary Learning</i> Wu Qidi and Li Yibing

	<ul style="list-style-type: none"> ○ <i>Research on Physical Layer Security of Cognitive Radio Network Based on RF-DNA</i> Chao Wang, Yun Lin, and Zhen Zhang
10:00 – 12:05	<ul style="list-style-type: none"> ● Session IV-E: Combinatorial Testing and Its Application I (Workshop) Chair: Junhua Ding Room: #153 <ul style="list-style-type: none"> ○ <i>Apply Combinatorial Testing in Industry Settings</i> Invited Talk (10:00 – 10:50) W. Eric Wong, University of Texas at Dallas, USA ○ <i>Combinatorial and MC/DC Coverage Levels of Random Testing</i> (10:50 – 11:15) Sergiy Vilkomir, Aparna Alluri, D. Richard Kuhn, and Raghu N. Kacker ○ <i>An Approach for Choosing the Best Covering Array Constructor to Use</i> (11:15 – 11:40) Hanefi Mercan, Cemal Yilmaz, and Kamer Kaya ○ <i>Combinatorial Testing of Full Text Search in Web Applications</i> (11:40 – 12:05) M S Raunak, D. Richard Kuhn, and Raghu Kacker
12:05 – 14:00	Lunch Break (Foyer) Poster Session II
14:00 – 16:05	<ul style="list-style-type: none"> ● Session V-A: Verification and Validation II (Short) Chair: Y.T. Yu Room: Krejcar <ul style="list-style-type: none"> ○ <i>Transferring Context-dependent Test Inputs</i> André Reichstaller and Alexander Knapp ○ <i>Towards Ex Vivo Testing of MapReduce Applications</i> Jesús Morán, Antonia Bertolino, Claudio de la Riva, and Javier Tuya ○ <i>A Novel Model for Software Development and Testing in Programmable Logic</i> Tao Zhang, Yu Su, Jianmin Wang, and Jinbo Wang ○ <i>Is Mutation Analysis Effective at Testing Android Apps?</i> Lin Deng, Jeff Offutt, and David Samudio ○ <i>WinHeap Explorer: Efficient and Transparent Heap-based Bug Detection in Machine Code</i> Maksim Shudrak
14:00 – 15:40	<ul style="list-style-type: none"> ● Session V-B: Panel <i>Conflicts and Synergies among Quality Requirements</i> Chairs: Barry Boehm and Xavier Franch Room: #112
14:00 – 15:40	<ul style="list-style-type: none"> ● Session V-C: Resilience Engineering and Economics III (Workshop) Chair: Nick Multari Room: #113 <ul style="list-style-type: none"> ○ <i>Towards Defendable Applications</i> Invited Talk (14:00 – 14:30) Volkmar Lotz

	<ul style="list-style-type: none"> ○ <i>Factors Driving Plans, Policies, and Application of Cybersecurity and Resilience in Government and Industry Panel</i> (14:30 – 15:40) Nick Multari (Moderator), Phil Owen, George Sharkov, Volkmar Lotz, and Peter Chen
14:00 – 15:40	<ul style="list-style-type: none"> ● Session V-D: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid IV (<i>Workshop</i>) Chair: Yun Lin Room: #152 <ul style="list-style-type: none"> ○ <i>Modulation Recognition of Digital Signal Based on Deep Auto-Ancoder Network</i> Tu Ya, Yun Lin, and Hui Wang ○ <i>Effects of Improper Ground Truth on Target Tracking Performance Evaluation in Benchmark</i> Gaocheng Liu, Shuai Liu, Mengye Lu, and Zheng Pan ○ <i>A Zombie Account Detection Method in Microblog Based on the Pagerank</i> Shaobo Li, Xuhang Li, He Yang, Guanglu Sun, and Fei Lang ○ <i>A New Recognition Method for M-QAM Signals IN SOFTWARE DEFINED RADIO</i> Yuning Zhao, Xiaodong Yang, and Yun Lin
14:00 – 15:40	<ul style="list-style-type: none"> ● Session V-E: Combinatorial Testing and Its Application II (<i>Workshop</i>) Chair: Mohammad S. Raunak Room: #153 <ul style="list-style-type: none"> ○ <i>Combinatorial Methods of Feature Selection for Cell Image Classification</i> Sergiy Vilkomir, Jiabin Wang, Nam Le Thai, and Junhua Ding ○ <i>A Parameter Free Choice Function Based HyperHeuristic Strategy for Pairwise Test Generation</i> Fakhrud Din, Abdul Rahman A. Alsewari, and Kamal Z. Zamli ○ <i>Can Pairwise Testing Perform Comparably to Manually Handcrafted Testing Carried Out by Industrial Engineers?</i> Peter Charbachi, Linus Eklund, and Eduard Enoiu ○ <i>On the Effectiveness of Combinatorial Interaction Testing: A Case Study</i> Miroslav Bures, and Bestoun S. Ahmed
15:40 – 16:10	Coffee Break (Foyer)
16:10 – 19:00	Conference Excursion to Old Town, Prague (Guided Tour)
19:00 – 21:30	Conference Banquet, Music Performance, and Award Ceremony Location: Kaiserstein Palace

Friday, July 28, 2017	
07:30 – 08:30	Registration (Foyer)
08:30 – 09:30	<ul style="list-style-type: none"> • Keynote Speech III Chair: Xiaoying Bai Room: Kotěra <i>Engineering Fine-Grain Dependability Requirements</i> Zhi Jin Peking University, China
09:30 – 10:00	Coffee Break (Foyer)
10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-A: Quality Prediction (Regular) Chair: Josef Kolář Room: Krejcar ○ <i>Predicting Bugs in Software Code Changes Using Isolation Forest</i> Yueyang He, Xiaoyan Zhu, Guangtao Wang, Heli Sun, and Yong Wang ○ <i>Predicting Fault-Prone Classes in Object-Oriented Software: An Adaptation of An Unsupervised Hybrid SOM Algorithm</i> Alexandre Boucher, and Mourad Badri ○ <i>Software Defect Prediction via Convolutional Neural Network</i> Jian Li, Pinjia He, Jieming Zhu, and Michael R. Lyu ○ <i>Predicting the Life Expectancy of Railway Fail-safe Signaling Systems Using Dynamic Models with Censoring</i> Petr Novak, Martin Danhel, Rudolf B. Blazek, Martin Kohlik, and Hana Kubatova ○ <i>Investigating the Significance of Bellwether Effect to Improve Software Effort Estimation</i> Solomon Mensah, Jacky Keung, Stephen G. MacDonell, Michael F. Bosu, and Kwabena E. Bennin
10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-B: Measurement and Management (Short) Chair: Hana Kubátová Room: #112 ○ <i>How Do Coupled File Changes Influence How Developers Seek Help During Maintenance Tasks?</i> Jasmin Ramadani and Stefan Wagner ○ <i>Should I Bug You? Identifying Domain Experts in Software Projects Using Code Complexity Metrics</i> Ralf Teusner, Christoph Matthies, and Philipp Giese ○ <i>Assessing the Quality of Tabular State Machines through Metrics</i> Ammar Osaiweran, Jelena Marincic, and Jan Friso Groote ○ <i>Cross-Project Defect Prediction Using A Credibility Theory based Naive Bayes Classifier</i> Wai Nam Poon, Kwabena Ebo Bennin, Jianglin Huang, Passakorn Phannachitta, and Jacky Wai Keung ○ <i>An Empirical Analysis of Three-stage Data-Preprocessing for Analogy-Based Software Effort Estimation on the ISBSG Data</i> Jianglin Huang, Yan-Fu Li, Jacky Wai Keung, Yuen Tak Yu, and W.K. Chan

10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-C: Analysis, Design and Modeling (Student Doctoral Program) Chair: Radu Mateescu Room: #113 <ul style="list-style-type: none"> ○ <i>VR City: Software Analysis in Virtual Reality Environment</i> Juraj Vincur, Pavol Navrat, and Ivan Polasek ○ <i>Hardware Identification via Sensor Fingerprinting in A Cyber Physical System</i> Chuadhry Mujeeb Ahmed and Aditya Mathur ○ <i>Model-Based Analysis of Timing and Energy Constraints in An Autonomous Vehicle System (Workshop)</i> Eun-Young Kang, Dongrui Mu, Li Huang, and Qianqing Lan ○ <i>From Design to Invariants: Detecting Attacks on Cyber Physical Systems</i> Sridhar Adepu and Aditya Mathur ○ <i>Modeling and Verification of User Interactions Using Constraint Programming (Workshop)</i> Mats Carlsson, Olga Grinchtein, and Justin Pearson
10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-D: Human and Social Aspects of Software Quality (Workshop) Chair: Ziyuan Wang Room: #152 <ul style="list-style-type: none"> ○ <i>Improving MC/DC and Fault Detection Strength Using Combinatorial Testing</i> Dong Li, Linghuan Hu, Ruizhi Gao, W. Eric Wong, D. Richard Kuhn, and Raghu N. Kacker ○ <i>An In-Depth Study of the Efficiency of Risk Evaluation Formulas for Multi-Fault Localization</i> Xiaolin Ju, Xiang Chen, Yibiao Yang, Shujuan Jiang, Junyan Qian, and Baowen Xu ○ <i>Could We Predict the Result of A Continuous Integration Build? An Empirical Study</i> Jing Xia and Yanhui Li ○ <i>Influence of the Distance Calculation Error on the Performance of Adaptive Random Testing</i> Yuanchao Qi, Ziyuan Wang, and Yongming Yao ○ <i>Design and Implementation of Combinatorial Testing Tools</i> Yongming Yao, Yiyang Yan, Ziyuan Wang, and Chen Liu
10:00 – 12:05	<ul style="list-style-type: none"> • Session VI-E: Trustworthy Computing (Workshop) Chair: Jigang Liu Room: #153 <ul style="list-style-type: none"> ○ <i>Managing Client-Specific Customised Functions in Multi-Tenant Software-As-A-Service</i> Khaled M. Khan and Zhuhan Jiang ○ <i>Provenance Information-Based Trust Evaluation Using Cooperation Pattern for Self-Adaptive Systems</i> Hyo-Cheol Lee and Seok-Won Lee

	<ul style="list-style-type: none"> ○ <i>A Model Driven Approach for Device Driver Development</i> Yunwei Dong, Yuanyuan He, Yin Lu, and Hong Ye ○ <i>Highly-Available Applications on Unreliable Infrastructure: Microservice Architectures in Practice</i> Daniel Richter, Marcus Konrad, Katharina Utecht, and Andreas Polze ○ <i>Testing the Effectiveness of Attack Detection Mechanisms in Industrial Control Systems</i> Gayathri Sugumar and Aditya Mathur
12:05 – 14:00	<p>Lunch Break (Foyer) Poster Session III</p>
14:00 – 15:40	<ul style="list-style-type: none"> ● Session VII-A: Safety and Security in Cyber-Physical Systems I (Workshop) Chair: Pete Rotella Room: Krejcar ○ <i>Verification and Validation of A Cyber-Physical System in the Automotive Domain</i> Eun-Young Kang, Dongrui Mu, Li Huang, and Qianqing Lan ○ <i>Towards An Integrated Model for Safety and Security Requirements of Cyber-Physical Systems</i> Michael Brunner, Michael Huber, Clemens Sauerwein, and Ruth Breu ○ <i>WaterJam: An Experimental Case Study of Jamming Attacks on A Water Treatment System</i> Sridhar Adepu, Jay Prakash, and Aditya Mathur ○ <i>Constraint-Based Consistency Checking for Multi-View Models of Cyber-Physical System</i> Gang Yang, Yuanyuan Lian, and Xingshe Zhou
14:00 – 15:40	<ul style="list-style-type: none"> ● Session VII-B: Fast Abstract I (16 minutes each) Chair: Ruizhi Gao Room: #112 ○ <i>An Enhanced Handover Scheme Adopting Mobile Relays in A LTE-A Network for High-Speed Movements</i> Li-Wen Chen and Yu-Lun Huang ○ <i>Spatio-Temporal Aware Testing for Complex Systems</i> Huai Liu, Jan Olaf Blech, Matt Duckham, and Heinz W. Schmidt ○ <i>Towards Effective and Scalable Testing for Complex High-Speed Railway Signal Software</i> Chunfeng Hu, Jin Guo, Nan Li, Yao Li, Chang Rao, and Siqi Liu ○ <i>Towards Automating Integration Testing of .NET Applications Using Roslyn</i> Mehrdad Saadatmand ○ <i>A Spatial-Temporal Model for Software Fault Tolerance in Safety-Critical Applications</i> Tao Zhang and Jinbo Wang ○ <i>Analysis of Software Service Usage in Healthcare Communication Services</i> Ashkan Hemmati, Chris Carlson, Maleknaz Nayebi, Guenther Ruhe, and Chad Saunders

14:00 – 15:40	<ul style="list-style-type: none"> • Session VII-C: Software Engineering and Big Data I (Workshop) Chair: Jian Wang Room: #113 ○ <i>Use Neural Network to Improve Fault Injection Testing</i> Yichen Wang and Yikun Wang ○ <i>Target Signal Synchronization Transmission in Coupling Network with Uncertain Parameters</i> Ting Zhang and Fuke Chang ○ <i>A Method of Personalized Tag Prediction Based on Graph Structure</i> Huang Yuan ○ <i>Identifying Indicators of Fake Reviews Based on Spammer’s Behavior Features</i> Pan Liu, Zhenning (Jimmy) Xu, Jun Ai, and Fei Wang
14:00 – 15:40	<ul style="list-style-type: none"> • Session VII-D: Software Engineering and Knowledge Management I (Workshop) Chair: Jianwen Xiang Room: #152 ○ <i>Automated Extraction of Feature Models from Android Based Portable Devices</i> Ilker Yildirim and Hasan Sozer ○ <i>Knowledge Management in Graduate Research</i> Jing Sun, Van-Nam Huynh, Yoshiteru Nakamori, Jianguo Wu, Jing Tian, and Jianwen Xiang ○ <i>Modeling of Hazard Affected Regions in Support of Scenario Evolution Analysis for Unconventional Emergency</i> Lili Rong and Zijun Qie ○ <i>An Empirical Study on How Empowering Leadership Affects the Team Creativity</i> Jiangning Wu, Xiangjie Ku, and Donghua Pan
14:00 – 15:40	<ul style="list-style-type: none"> • Session VII-E: Software Cybernetics (Workshop) Chair: Hongji Yang Room: #153 ○ <i>A Content-Based Phishing Email Detection Method</i> Hongming Che, Qinyun Liu, Lin Zou, Hongji Yang, Dongdai Zhou, and Feng Yu ○ <i>Emergency Travel Plan Generation Based on Cybernetics</i> Sicong Ma, Hongji Yang, Lu Zhang, Dongdai Zhou, and Hua Zhou ○ <i>QoS-Aware Resource Management in SDN-Based InterClouds: A Software Cybernetics Perspective</i> Suleiman Onimisi Aliyu, Feng Chen, and Ying He ○ <i>Compressing Uniform Test Suites Using Variational Autoencoders</i> Andre Reichstaller and Alexander Knapp
15:40 – 16:00	Coffee Break (Foyer)
16:00 – 17:40	<ul style="list-style-type: none"> • Session VIII-A: Safety and Security in Cyber-Physical Systems II (Workshop) Chair: Gang Yang

	<p>Room: Krejcar</p> <ul style="list-style-type: none"> ○ <i>Monitor Synthesis for Parametric MTL Properties in Discrete Control Software</i> Hao Shi, Wei Dong, Ge Zhou, and Liangze Yin ○ <i>Optimal Test Case Generation for Simulink Models Using Slicing</i> Zhenying Jiang, Xiao Wu, Zeqian Dong, and Ming Mu ○ <i>Optimizing Monitor Code Based on Patterns in Runtime Verification</i> Ge Zhou, Wei Dong, Wanwei Liu, Hao Shi, Chi Hu, and Liangze Yin
16:00 – 17:40	<ul style="list-style-type: none"> ● Session VIII-B: Fast Abstract II (16 minutes each) Chair: Yihao Li Room: #112 ○ <i>Model Dressing for Automated Exploratory Testing</i> Mehmet Cagri Calpur, Sevgi Arca, Tansu Cagla Calpur, and Cemal Yilmaz ○ <i>Using Eye Tracking Technology to Analyze the Impact of Stylistic Inconsistency on Code Readability</i> Qing Mi, Jacky Keung, Jianglin Huang, and Yan Xiao ○ <i>Scalability of Cloud Based SCIT-MTD</i> Quyên L. Nguyen and Arun Sood ○ <i>Quality Evaluation of Digital Soft IP Core for FPGA System</i> Dengyun Lei, Li-wei Wang, Jun Lin, and Yunfei En ○ <i>Malware Behavior Ontology for Digital Evidence</i> Jigang Liu, Rashmi Kammar, Ryoichi Sasaki, and Tetsutaro Uehara ○ <i>An Analysis of Vulnerability Trends, 2008 - 2016</i> D. Richard Kuhn, M S Raunak, and Raghu Kacker
16:00 – 17:40	<ul style="list-style-type: none"> ● Session VIII-C: Software Engineering and Big Data II (Workshop) Chair: Rudolf B. Blažek Room: #113 ○ <i>Public Cultural Services Recommendation System Architecture</i> Shufeng Ye, Yi Yang, Weixing Huang, Jian Wang, and Guigang Zhang ○ <i>A User Profile Modeling Method Based on Word2Vec</i> Jianqiao Hu, Feng Jin, Guigang Zhang, Jian Wang, and Yi Yang ○ <i>A Novel Hidden Markov Model for Genome-Wide Association Studies</i> Junli Yang, Bo Song, Bing Yan, and Guoqiang Li
16:00 – 17:40	<ul style="list-style-type: none"> ● Session VIII-D: Software Engineering and Knowledge Management II (Workshop) Chair: Jing Tian Room: #152 ○ <i>The Effect of Personality on Team Performance: An Interpersonal Knowledge Interaction Perspective</i> Xin Yue and Yanzhong Dang ○ <i>An Ontology-Based Knowledge Sharing Portal for Software Testing</i> Shanmuganathan Vasanthapriyan, Jing Tian, Dongdong Zhao, Shengwu Xiong, and Jianwen Xiang

	<ul style="list-style-type: none"> ○ <i>A Comparative Study of Knowledge Management on Undergraduate by Questionnaire</i> Jianguo Wu, Dongdong Zhao, Liping Lu, Jing Tian, and Jianwen Xiang ○ <i>Process Metrics Are Not Bad Predictors of Fault Proneness</i> Biljana Stanic, and Wasif Afzal
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Saturday, July 29, 2017	
09:30 – 11:00	QRS 2018 Planning Meeting (Open to public) Room: #364

Poster Papers Accepted by QRS2017

- *A Mixed Poisson process and Empirical Bayes estimation based Software Reliability Growth Model and Simulation*
Nestor Ruben Barraza
- *A Software Reliability Prediction Model Using Improved Long Short Term Memory Network*
Fu Yangzhen, Zhang Hong, Zeng Chenchen, and Feng Chao
- *Verification Methods for Secure and Reliable SoPC Systems*
Lu Kong and JinBo Wang
- *A Pragmatic Perspective on Regression Testing Challenges*
DanielBrahneborg, WasifAfzal, and Adnan Causevic
- *Reliability Modeling of Two-phase Gamma Degradation Process*
Fengjun Duan and Guanjun Wang
- *Software Fault Injection Campaign Generation for Cloud Infrastructures*
Lena Feinbube, Lukas Pirl, Peter Tröger, and Andreas Polze
- *A New Software Reliability Model for Open Stochastic System based on NHPP*
Qiuying Li, Chao Zhang and Hong Zhang
- *A Fault Diagnosis Expert System for Flight Control Software Based on SFMEA and SFTA*
Yuanxun Shao, Bin Liu, Guoqi Li, and Ran Yan
- *Automated Generator for Complex and Realistic Test Data*
Richard Lipka
- *Theoretical Feasibility of Statistical Assurance of Programmable Systems Based on Simulation Tests*
Luping Chen and John May
- *A Software Security Case Developing Method Based on Hierarchical Argument Strategy*
Biao Xu, Minyan Lu, and Dajian Zhang
- *Empirical Study on the Correlation between Software Structural Modifications and Its Fault-proneness*
Fei Wang, Jun Ai, and Jiaming Wang
- *Hierarchical Combination Design Method of Test Case Based on Conditional Constraints*
Jianmin Wang, Xiaohua Wang, Yunyun Ma, and Jinbo Wang