QRS 2018 Session Schedule

Monday, July 16, 2018		
08:00 – 09:00	Registration	Foyer

09:00 – 12:30	• T1: Data Science and Measurement in Software Reliability Engineering
	    Pete Rotella (Cisco Systems, USA)
	    Sunita Chulani (Cisco Systems, USA)
	• T4: An Overview of Network Reliability and its Evaluation
	    Ning Huang (Beihang University, China)
	    Xiaoyang Li (Beihang University, China)
		VA1
		
		VA2

12:30 – 13:30	Lunch Break	Foyer

13:30 – 17:00	• T3: Using Software Development Artifacts to Improve the Software
	    Development Process
	    Shannon Conners (JMP division of SAS, USA)
	    Joseph Morgan (JMP division of SAS, USA)
		VA1

Tuesday, July 17, 2018		
08:00 – 09:00	Registration	Foyer

09:00 – 09:15	Opening Ceremony
	• Steering Committee Chair: W. Eric Wong
	  (University of Texas at Dallas, USA)
	• General Chairs:
	  Ina Schieferdecker (Fraunhofer FOKUS, Germany)
	  Yuanshun Dai (University of Electronic Science and Technology of China)
	• Program Chairs:
	  Rui Maranhão Abreu (University of Lisbon, Portugal)
	  Hongyu Zhang (University of Newcastle, Australia)
		GA

09:15 – 10:15	• Keynote Speech I
	  Why You Should Care About Technical Debt (More Than You Think)
	  Paris Avgeriou
	  University of Groningen, The Netherlands
		GA

10:15 – 10:35	Coffee Break	Foyer
10:35 – 12:15	• Session I-A: Fault Diagnosis I • Session I-B: Formal Methods • Session I-C: Quality Prediction • Session I-D: Security and Privacy I • Session I-E: Invited Talks • Session I-F: International Software Testing Contest	VA1 VA2 VA3 02.1 02.2 01.1
12:15 – 14:00	Lunch Break Poster Session I	Foyer
14:00 – 15:40	• Session II-A: Fault Diagnosis II • Session II-B: Software Maintenance • Session II-C: Quality Improvement • Session II-D: Industry Track • Session II-E: Automated Intelligent Software Testing I (Workshop) • Session II-F: International Software Testing Contest	VA1 VA2 VA3 02.1 02.2 01.1
15:40 – 16:00	Coffee Break	Foyer
16:00 – 17:40	• Session III-A: Mutation Testing • Session III-B: Software Analysis • Session III-C: Cyber Resilience Economics I (Workshop) • Session III-D: Security and Privacy II • Session III-E: Automated Intelligent Software Testing II (Workshop) • Session III-F: International Software Testing Contest	VA1 VA2 VA3 02.1 02.2 01.1
18:00 – 19:30	Conference Reception (IST Gardens)	

Wednesday, July 18, 2018		
08:00 – 09:00	Registration	Foyer
09:00 – 10:00	• Keynote Speech II *Belief Reliability for Uncertain Random Systems* Rui Kang Beihang University, China	GA
10:00 – 10:20	Coffee Break	Foyer
10:20 – 12:00	• Session IV-A: Performance and Safety • Session IV-B: Software Engineering and Knowledge Management (Workshop) • Session IV-C: Cyber Resilience Economics II (Workshop) • Session IV-D: Safety and Security in Cyber-Physical Systems I (Workshop) • Session IV-E: Automated Intelligent Software Testing III (Workshop) • Session IV-F: Model-based Verification and Validation I (Workshop)	VA1 VA2 VA3 02.1 02.2 01.1
12:00 – 14:00	Lunch Break Poster Session II	Foyer
14:00 – 15:40	• Session V-A: Software Testing I • Session V-B: Conflicts and Synergies among Reliability, Security, and other Qualities I (Workshop) • Session V-C: Quality Oriented Engineering I (Workshop) • Session V-D: Safety and Security in Cyber-Physical Systems II (Workshop) • Session V-E: Automated Intelligent Software Testing IV (Workshop) • Session V-F: Blockchain, Smart Contracts, and Digital Society I (Workshop)	VA1 VA2 VA3 02.1 02.2 01.1
15:40 – 16:00	Coffee Break	Foyer
16:00 – 17:40	• Session VI-A: Software Testing II • Session VI-B: Conflicts and Synergies among Reliability, Security, and other Qualities II (Workshop) • Session VI-C: Quality Oriented Engineering II (Workshop) • Session VI-D: Verification and Validation of Adaptive Software Systems (Workshop) (extended to 6:00 pm) • Session VI-E: Blockchain, Smart Contracts, and Digital Society II (Workshop)	VA1 VA2 VA3 02.1 02.2
19:30 – 22:00	Conference Banquet, Music Performance, and Award Ceremony Museu da Cidade Campo Grande 245, 1700-091 Lisboa (near de Campo Grande metro station)	

Thursday, July 19, 2018		
08:00 – 09:00	Registration	Foyer
09:00 – 10:00	• Keynote Speech III *Perspectives on Dependability and Security Benchmarking: TO BEnchmark OR NOT TO BEnchmark* Marco Vieira University of Coimbra, Portugal	GA
10:00 – 10:20	Coffee Break	Foyer
10:20 – 12:00	• Session VII-A: Program Analysis and Repair • Session VII-B: Human and Social Aspects of Software Quality I (Workshop) • Session VII-C: Quality Oriented Engineering III (Workshop) • Session VII-D: Model-based Verification and Validation II (Workshop) • Session VII-E: Fast Abstract	VA1 VA2 VA3 02.1 02.2
12:00 – 14:00	Lunch Break Poster Session III	Foyer
14:00 – 15:40	• Session VIII-A: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid I (Workshop) • Session VIII-B: Human and Social Aspects of Software Quality II (Workshop) • Session VIII-C: Reliability and Resilience of Complex Systems I (Workshop) • Session VIII-D: Trustworthy Computing (Workshop) • Session VIII-E: System Reliability in Cloud Computing and Big Data I (Workshop)	VA1 VA2 VA3 02.1 02.2
15:40 – 16:00	Coffee Break	Foyer
16:00 – 17:40	• Session IX-A: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid II (Workshop) • Session IX-B: Reliability and Resilience of Complex Systems II (Workshop) • Session IX-C: Software Engineering and Big Data (Workshop) • Session IX-D: System Reliability in Cloud Computing and Big Data II (Workshop)	VA1 VA2 VA3 02.1

Friday, July 20, 2018		
09:30 – 11:00	QRS 2019 Planning Meeting (Open to Public)	VA1
11:00 – 12:15	Closing Ceremony	Foyer

QRS 2018 Presentation Schedule

Tuesday, July 17, 2018	
08:00 – 09:00	Registration (Foyer)

09:00 – 09:15	**Opening Ceremony**
	Room: Auditorium
	
	• Steering Committee Chair: W. Eric Wong
	  (University of Texas at Dallas, USA)
	• General Chairs:
	  Ina Schieferdecker (Fraunhofer FOKUS, Germany)
	  Yuanshun Dai (University of Electronic Science and Technology of China)
	• Program Chairs:
	  Rui Maranhão Abreu (University of Lisbon, Portugal)
	  Hongyu Zhang (University of Newcastle, Australia)

09:15 – 10:15	• Keynote Speech I
	  Chair: Eric Wong
	  Room: Auditorium
	
	  Why You Should Care About Technical Debt (More Than You Think)
	  Paris Avgeriou
	  University of Groningen, The Netherlands

10:15 – 10:35	Coffee Break (Foyer)

10:35 – 12:15	• Session I-A: Fault Diagnosis I
	  Chair: Katerina Goseva-Popstojanova
	  Room: VA1
	
	  ○ *MisconfDoctor: Diagnosing Misconfiguration via Log-based Configuration Testing (R)*
	     Teng Wang, Xiaodong Liu, Shanshan Li, Xiangke Liao, Wang Li, and Qing Liao
	
	  ○ *BehaviorKI: Behavior Pattern Based Runtime Integrity Checking for Operating System Kernel (R)*
	     Xinyue Feng, Qiusong Yang, Lin Shi, and Qing Wang
	
	  ○ *MASKED: A MapReduce Solution for the Kappa-pruned Ensemble-based Anomaly Detection System (R)*
	     Md Shariful Islam, Korosh Koochekian Sabor, Abdelaziz Trabelsi, Wahab Hamou-Lhadj, and Luay Alawneh
	
	  ○ *Probabilistic Sampling-based Testing for Accelerated Reliability Assessment (R)*
	     Roberto Pietrantuono and Stefano Russo

10:35 – 12:15	• Session I-B: Formal Methods
	  Chair: Shaoying Liu
	  Room: VA2
	
	  ○ *An Automatic Parameterized Verification of FLASH Cache Coherence Protocol (R)*
	     Yongjian Li, Jialun Cao, and Kaiqiang Duan
	
	  ○ *TBFV-SE: Testing-Based Formal Verification with Symbolic Execution (S)*
	     Rong Wang and Shaoying Liu
	
	  ○ *Verifying Stochastic Behaviors of Decentralized Self-Adaptive Systems : A Formal Modeling and Simulation Based Approach (S)*
	     Nianyu Li, Di Bai, Yiming Peng, Zhuoqun Yang, and Wenpin Jiao

	o *Analysis of Experiences with the Engineering of a Medical Device using State-based Formal Methods (S)* Atif Mashkoor and Alexander Egyed
10:35 – 12:15	• Session I-C: Quality Prediction Chair: David Lo Room:VA3 o *Machine Learning to Evaluate Evolvability Defects: Code Metrics Thresholds for a Given Context (R)* Naohiko Tsuda, Hironori Washizaki, Yoshiaki Fukazawa, Yuichiro Yasuda, and Shunsuke Sugimura o *Is Predicting Software Security Bugs using Deep Learning Better than the Traditional Machine Learning Algorithms? (S)* Caesar Jude Clemente, Fehmi Jaafar, and Yasir Malik o *A Method for Predicting Two-variable Atomicity Violations (S)* Zhuo Sun, Reng Zeng, and Xudong He o *Cross-Entropy: A New Metric for Software Defect Prediction (R)* Xian Zhang, Kerong Ben, and Jie Zeng
10:35 – 12:15	• Session I-D: Security and Privacy I Chair: Bruno Lima Room: 02.1 o *Introspection for ARM TrustZone with the ITZ Library (R)* Miguel Guerra, Benjamin Taubmann, Hans P. Reiser, Sileshi Yalew, and Miguel Correia o *A Security Model for Access Control in Graph-Oriented Databases (S)* Claudia Morgado, Gisele Busichia Baioco, Tania Basso, and Regina Moraes o *How Usable are Rust Cryptography APIs? (R)* Kai Mindermann, Philipp Keck, and Stefan Wagner o *Hypervisor-based Sensitive Data Leakage Detector (S)* Shu-Hao Chang, Sanoop Mallissery, Chih-Hao Hsieh, and Yu-Sung Wu
10:35 – 12:15	• Session I-E: Invited Talks Chair: Franz Wotawa Room: 02.2 o *Breaking the Trust: Why Companies are Failing their Customers* Mike Pecht o *Lessons Learned from Developing Permissioned Blockchains* Wei-Tek Tsai
10:35 – 12:15	• Session I-F: International Software Testing Contest Room: 01.1
12:15 – 14:00	Lunch Break (Foyer) Poster Session I
14:00 – 15:40	• Session II-A: Fault Diagnosis II Chair: Dianxiang Xu Room: VA1 o *Detecting Errors in A Humanoid Robot (S)* Jun Inoue, Fumio Kanehiro, Mitsuharu Morisawa, and Akira Mori o *SynEva: Evaluating ML Programs by Mirror Program Synthesis (R)* Yi Qin, Huiyan Wang, Chang Xu, Xiaoxing Ma, and Jian Lu

	o *Using Crash Frequency Analysis to Identify Error-prone Software Technologies in Multi-System Monitoring (S)* Andreas Schörgenhumer, Mario Kahlhofer, Hanspeter Mössenböck, and Paul Grünbacher o *Exploratory Data Analysis of Fault Injection Campaigns (R)* Frederico Cerveira, Imre Kocsis, Raul Barbosa, Henrique Madeira, and András Pataricza
14:00 – 15:40	• Session II-B: Software Maintenance Chair: Benedikt Eberhardinger Room: VA2 o *Differencing Graphical User Interfaces (R)* Mark Grechanik, B.M. Mainul Hossain, Chi Wu Mao, Ankush Baisal, and David Rosenblum o *Change-Based Test Script Maintenance for Android Apps (R)* Nana Chang, Linzhang Wang, Yu Pei, and Xuandong Li o *How Do Defects Hurt Qualities? An Empirical Study on Characterizing A Software Maintainability Ontology in Open Source Software (R)* Celia Chen, Lin Shi, Michael Shoga, Barry Boehm, and Qing Wang o *An Empirical Study of the Impact of Code Smell on File Changes (R)* Can Zhu, Xiaofang Zhang, Yang Feng, and Lin Chen
14:00 – 15:40	• Session II-C: Quality Improvement Chair: Tugkan Tuglular Room:VA3 o *On The Suitability of A Portfolio-Based Design Improvement Approach (S)* Johannes Bräuer, Reinhold Plösch, Christian Körner, and Matthias Saft o *Automatic Detection of Feature Interactions Using Symbolic Analysis and Evolutionary Computation (R)* Byron DeVries and Betty H.C. Cheng o *Implementing Traceability Repositories as Graph Databases for Software Quality Improvement (S)* Randa Elamin and Rasha Osman o *Provably Secure Cryptographic ABAC System to Enhance Reliability and Privacy using Real-time Token and Dynamic Policy (R)* Yan Zhu, Ruyun Yu, Yao Qin, Di Ma, and William Cheng-Chung Chu
14:00 – 15:40	• Session II-D: Industry Track Chair: Sunita Chulami Room: 02.1 o *DFT+Emulation - A faster way to close verification* Jitendra Aggarwal, Tran Nguyen, and Piyush Kumar Gupta o *Automated detection and processing of field crash reports* Shannon Conners o *Cerberus: an Automated Tool for Continuous Testing* Ana Filipa Nogueira, Carlos Machado, Antoine Craske, Benoit Dumont José C. B. Ribeiro, and Mário Zenha-Rela o *Towards Safe, Secure, and Resilient Systems (Invited Talk)* Jeffrey Picciotto

	o *Validation of Asymmetric Cyber Resiliency (Invited Talk)* Nicholas J. Multari
14:00 – 15:40	• Session II-E: Automated Intelligent Software Testing I (Workshop) Chair: Shaomin Zhu Room: 02.2 o *An AI Software Test Method Based on Scene Deductive Approach* Xinghan Zhao, Xiangfei Gao, and Long Zhang o *FeT: Hybrid Cloud-based Mobile Bank Application Testing* Chaonian Guo, Shaomin Zhu, Tongsen Wang, and Hao Wang o *Defect Prediction Based on The Characteristics of Multilayer Structure of Software Network* Yiwen Yang, Jun Ai, and Fei Wang o *A New Software Reliability Evaluation Model Based on The Probability of The Failure Mode* Yunqiang Yan, Yanhong Peng, Chang Liu, and Haifeng Li o *Design and Application of A Sikuli Based Capture-Replay Tool* Jin-lei Sun, Song Huang, and Zhanwei Hui
14:00 – 15:40	• Session II-F: International Software Testing Contest Room: 01.1
15:40 – 16:00	Coffee Break (Foyer)
16:00 – 17:40	• Session III-A: Mutation Testing Chair: Junhua Ding Room: VA1 o *Mutation Testing for Physical Computing (R)* Qianqian Zhu and Andy Zaidman o *Vulnerability Assessment of Web Services with Model-based Mutation Testing (R)* Faezeh Siavashi, Dragos Truscan, and Juri Vain o *Manifesting Bugs in Machine Learning Code: An Explorative Study with Mutation Testing (R)* Dawei Cheng, Chun Cao, Chang Xu, and Xiaoxing Ma o *Model-based Mutation Operators for Timed Systems: A Taxonomy and Research Agenda (S)* James Ortiz Vega, Gilles Perrouin, Moussa Amrani, and Pierre-Yves Schobbens
16:00 – 17:40	• Session III-B: Software Analysis Chair:Linzhang Wang Room: VA2 o *Does Socio-Technical Congruence Have An Effect on Continuous Integration Build Failures? An Empirical Study on 10 GitHub Projects (R)* Weiqiang Zhang, Zhenyu Chen, and Bin Luo o *Identification of Security related Bug Reports via Text Mining Using Supervised and Unsupervised Classification (R)* Katerina Goseva-Popstojanova, and Jacob Tyo o *The State of Practice on Virtual Reality (VR) Applications: An Exploratory Study on Github and Stack Overflow (R)* Naoures Ghrairi, Amine Barrak, Fabio Petrillo, Segla Kpodjedo, and Foutse Khomh

16:00 – 17:40	• Session III-C: Cyber Resilience Economics I (Workshop)
	Chair: Jeff Picciotto
	Room: VA3
	
	   o *Mission Assurance: Beyond Secure Processing*
	     Michael Vai, David Whelihan, Jacob Leemaster, Haley Whitman, Willahelm Wan, Yunsi Fei, Roger Khazan, Ilia Lebedev, Kyle Hogan, and Srini Devadas
	
	   o *Open Source Value Chains for Addressing Security Issues Efficiently*
	     Arnd Weber, Steffen Reith, Dirk Kuhlmann, Michael Kasper, Jean-Pierre Seifert, and Christoph Krauß
	
	   o *Implementing Cyber Resilient Designs Through Graph Analytics Assisted Model Based Systems Engineering*
	     Anurag Dwivedi

16:00 – 17:40	• Session III-D: Security and Privacy II
	Chair: Ning Huang
	Room: 02.1
	
	   o *Spiral^{SRA}: A Threat-Specific Security Risk Assessment Framework for the Cloud (S)*
	     Armstrong Nhlabatsi, Jin Hong, Kim Dong Seong, Rachael Fernandez, Noora Fetais, and Khaled M. Khan
	
	   o *Hardening Application Security using Intel SGX (S)*
	     Max Plauth, Fredrik Teschke, Daniel Richter, and Andreas Polze

16:00 – 17:40	• Session III-E: Automated Intelligent Software Testing II (Workshop)
	Chair: Xiaofang Zhang
	Room: 02.2
	
	   o *Full Digital Simulation Testing of Networked Embedded Software*
	     Feng Gao, Fei Deng, Yunqiang Yan, and Cunlei Li
	
	   o *Automated Warship Software Testing System Based On LoadRunner Automation API*
	     Xinyu Han, Nan Zhang, Wei He, Kai Zhang, and Longli Tang
	
	   o *MURE: Making Use of MUtations to REfine Spectrum-based Fault Localization*
	     Zijie Li, Lanfei Yan, Zhenyu Zhang, and Bo Jiang
	
	   o *Research on The Reuse of Test Case for Warship Equipment Software*
	     Nan Zhang, Haiyan Chai, and Xinyu Han
	
	   o *Metamorphic Testing of Image Region Growth Programs in Image Processing Applications*
	     Chao Jiang, Song Huang, and Zhanwei Hui

16:00 – 17:40	• Session III-F: International Software Testing Contest Room: 01.1
18:00 – 19:30	• Conference Reception Location: IST Gardens

Wednesday, July 18, 2018	
08:00 – 09:00	Registration (Foyer)
09:00 – 10:00	• Keynote Speech II Chair: Hongyu Zhang Room: Auditorium *Belief Reliability for Uncertain Random Systems* Rui Kang Beihang University, China
10:00 – 10:20	Coffee Break (Foyer)

10:20 – 12:00	• Session IV-A: Performance and Safety
	Chair: Shannon Conners
	Room: VA1
	
	  o *Performance Analysis Using Automatic Grouping (S)*
	    Isnaldo Francisco De Melo Junior, Abderrahmane Benbachir, and Michel Dagenais
	
	  o *QuantCloud: A Software with Automated Parallel Python for Quantitative Finance Applications (S)*
	    Peng Zhang, Xiang Shi, and Yuxiang Gao
	
	  o *Safety-Critical System Modeling in Model-Based Testing with Hazard and Operability Analysis (S)*
	    Chang Rao, Jin Guo, Nan Li, Yu Lei, Yadong Zhang, and Yao Li

10:20 – 12:00	• Session IV-B: Software Engineering and Knowledge Management (Workshop)
	Chair: Jiangning Wu
	Room: VA2
	
	  o *Tracing Error Propagation in C/C++ Applications*
	    Shiyi Kong, Minyan Lu, and Luyi Li
	
	  o *Energy Optimization and Fault Tolerance to Embedded System based on Adaptive Heterogeneous Multi-core Hardware Architecture*
	    Xing Liu, Panwen Liu, Xin Yan, Zhangyu Cheng, Ruoshi Xia, Haiying Zhou, Kun Mean Hou, and Christophe De Vaulx
	
	  o *Optimum Post-disruption Restoration Plan of Interdependent Critical Infrastructures*
	    Lili Rong, Kesheng Yan, and Guangqian Zhang
	
	  o *Research on the Impact of Consumer Review Sentiments from Different Websites on Product Sales*
	    Yanzhong Dang, Lingyu Du, and Jiangning Wu
	
	  o *A Study of Software Testing Practices in Sri Lankan Software Companies*
	    Shanmuganathan Vasanthapriyan

10:20 – 12:00	• Session IV-C: Cyber Resilience Economics II (Workshop)
	Chair: Nick Multari
	Room: VA3
	
	  o *The Economics of Blockchain Resilience: Energy, Incentives, and Rationality (Invited Talk)*
	    Paulo Verissimo
	
	  o *Cyber Resiliency: Why, What and How? (Invited Talk)*
	    Rosalie McQuaid
	
	  o *Factors driving plans, policies, and application of cybersecurity and resilience in government and industry (Panel)*

10:20 – 12:00	• Session IV-D: Safety and Security in Cyber-Physical Systems I (Workshop)
	Chair: Wei Dong
	Room: 02.1
	
	   o *Lightweight Key Agreement for Wireless Sensor Networks*
	     Jaruwan Mesit, Matthias Brust, and Pascal Bouvry
	
	   o *Information Security Considerations for Wireless Infusion Pumps*
	     Pooja Rajendra Prasad, Sergey Butakov, and Fehmi Jaafar
	
	   o *Simulation Testing of Fault-Tolerant CPS based on Hierarchical Adaptive Policies*
	     Siyou Ma and Yunqiang Yan
	
	   o *Safety-based Software Reconfiguration Method for Integrated Modular Avionics Systems in AADL Model*
	     Xiaomin Wei, Yunwei Dong, and Mingrui Xiao

10:20 – 12:00	• Session IV-E: Automated Intelligent Software Testing III (Workshop)
	Chair: William Chu
	Room: 02.2
	
	   o *Scenario-Based Software Reliability Testing and Evaluation of Complex Information Systems*
	     Lijin Wu, Wei He, Bojiang Liu, Xinyu Han, and Longli Tang
	
	   o *A New Method of Evolutionary Testing For Path Coverage.*
	     Yijin Li, Yuheng Zhang, and Qingjie Wei
	
	   o *Decomposing Constraints for Better Coverage in Test Data Generation*
	     Ju Qian, Kun Liu, Hao Chen, Zhiyi Zhang, and Zhe Chen
	
	   o *Combinatorial Test Case Prioritization Based on Incremental Combinatorial Coverage Strength*
	     Ziyuan Wang and Feiyan She
	
	   o *Automatic Test Transition Paths Generation Approach from EFSM Using State Tree*
	     Yuan Chen, Junjie Wang, Yuanzhang Song, Anbang Wang, Luo Liu, and Qinghua Ha

10:20 – 12:00	• Session IV-F: Model-based Verification and Validation I (Workshop)
	Chair: Hasan Ural
	Room: 01.1
	
	   o *Model-Based Integration Strategies for Cyber-Physical Systems (Invited Talk)*
	     Mario Winter
	
	   o *Equivalence Checking for Hybrid Control Systems modelled in Simulink*
	     Sebastian Schlesinger, Paula Herber, Thomas Göthel, and Sabine Glesner
	
	   o *Event Sequence Graph-based Feature-oriented Testing: A Preliminary Study*
	     Tugkan Tuglular

12:00 – 14:00	Lunch Break (Foyer) Poster Session II

14:00 – 15:40	• Session V-A: Software Testing I
	Chair: Manuel Nuñez
	Room: VA1
	
	   o *Model-Based Testing of Obligatory ABAC Systems (R)*
	     Samer Khamaiseh, Patrick Chapman, and Dianxiang Xu

	o *Combinatorial Modeling and Test Case Generation for Industrial Control Software using ACTS (R)* Sara Ericsson and Eduard Enoiu o *Avoiding the Familiar to Speed Up Test Case Reduction (R)* Golnaz Gharachorlu and Nick Sumner o *Towards a Testing Framework with Visual Feedback for Actor-based Systems (S)* Hasan Sozer, Ozan Gurler, and Orhan Yilmaz
14:00 – 15:40	• Session V-B: Conflicts and Synergies among Reliability, Security, and other Qualities I (Workshop) Chair: Barry Boehm Room: VA2 o *Striking A Balance amongst Quality Attributes (Invited Talk)* Sunita Chulani o *Towards a Coherent Terminology and Taxonomy for Evaluating Safety via Testing* Nils Müllner and Wasif Afzal
14:00 – 15:40	• Session V-C: Quality Oriented Engineering I (Workshop) Chair: Zhiyi Zhang Room: VA3 o *Information System Reliability Quantitative Assessment Method and Engineering Application* Jingwei Shang, Ping Chen, Qiang Wang, and Liewen Lu o *GPU and Multiprocessing Parallel Implementations for The Elimination of Finite State Machine Mutants* Emad Badawi, Khaled El-Fakih, and Gerassimos Barlas o *On The Effectiveness of Automatically Inferred Invariants in Detecting Regression Faults in Spreadsheets* Sohon Roy, Arie van Deursen, and Felienne Hermans o *Functional Dependency Detection for Integration Test Cases* Sahar Tahvili, Marcus Ahlberg, Eric Fornander, Wasif Afzal, Mehrdad Saadatmand, Markus Bohlin, and Mahdi Sarabi
14:00 – 15:40	• Session V-D: Safety and Security in Cyber-Physical Systems II (Workshop) Chair: Yin Lu Room: 02.1 o *Collaborative Simulation Testing with State Behavior Tree* Yunqiang Yan and Siyou Ma o *Automatic Exploit Generation for Buffer Overflow Vulnerabilities* Weixi Jia, Luhang Xu, Wei Dong, and Yongjun Li o *Modeling and Analyzing Cyber Physical Systems Using High Level Petri Nets* Xudong He o *Guide Fuzzing with Multi-Factor Potential Analysis* Luhang Xu, Wei Dong, Liangze Yin, and Quixi Zhong
14:00 – 15:40	• Session V-E: Automated Intelligent Software Testing IV (Workshop) Chair: Jinbo Wang Room: 02.2

	o *Research on Software Failure Analysis and Quality Management Model* Chen Yusong, Chen Jianguang, and Gao Yang o *Towards a Bayesian Network Model for Predicting Flaky Automated Tests* Tariq King, Dionny Santiago, Justin Phillips, and Peter Clarke o *MuNN: Mutation Analysis of Neural Networks* Weijun Shen, Jun Wan, and Zhenyu Chen o *Analysis of covering arrays using prior information* Ryan Lekivetz and Joseph Morgan o *Test Scenario Generation Using Model Checking* Zhixiong Yin, Min Zhang, Guoqiang Li, and Ling Fang
14:00 – 15:40	• Session V-F: Blockchain, Smart Contracts, and Digital Society I (Workshop) Chair: Gang Yang Room: 01.1 o *Blockchain and Scalability* Anamika Chauhan, Om Prakash Malviya, Madhav Verma, and Tejinder Singh Mor o *On the Similarities Between Blockchains and Merkle-Damgård Hash Functions* Kimmo Halunen, Visa Vallivaara, and Anni Karinsalo o *Smart contracts for a Mobility-as-a-Service Ecosystem* Anni Karinsalo and Kimmo Halunen
15:40 – 16:00	Coffee Break (Foyer)
16:00 – 17:40	• Session VI-A: Software Testing II Chair: Jun Ai Room: VA1 o *Using Mutant Stubbornness to Create Minimal and Prioritized Test Sets (R)* Loreto Gonzalez-Hernandez, Birgitta Linström, Jeff Offutt, Sten F. Andler, Pasqualina Potena, and Markus Bohlin o *Target Selection for Test-Based Resource Adaptation (R)* Arpit Christi and Alex Groce o *From Natural Language Requirements to Passive Test Cases using Guarded Assertions (R)* Daniel Flemström, Eduard Enoiu, Wasif Afzal, Daniel Sundmark, Thomas Gustafsson, and Avenir Kobetski
16:00 – 17:40	• Session VI-B: Conflicts and Synergies among Reliability, Security, and other Qualities II (Workshop) Chair: Xavier Franch Room: VA2 o *An Analysis of the Inclusion of Environmental Cost Factors in Software Cost Estimation Datasets* Emtinan Mustafa and Rasha Osman o *Open position statements by attendees* o *Discussion & Wrap-up*
16:00 – 17:40	• Session VI-C: Quality Oriented Engineering II (Workshop) Chair: Peng Sun Room: VA3

	o *A Test Path Generation Method Based on SSM Models* Hao Lan, Yin Tong, Jin Guo, Yadong Zhang, Yao Li, and Chang Rao o *A FPGA based SAT Solver with High Random and Concurrent Strategies* Anping He, Lvying Yu, Haitao Zhang, Jinzhao Wu, and Lian Li o *A Study of The Extraction of Bug Judgment and Correction Times from Open Source Software Bug Logs* Seher Razzaq, Yan-Fu Li, and Chu-Ti Lin o *Software Component Reliability Evaluation Method Based on Characteristic Parameters* Ren-ya He, Long-li Tang, Xin-yu Han, Wei He, and Ze-hui Zhao
16:00 – 18:00	• Session VI-D: Verification and Validation of Adaptive Software Systems (Workshop) (extended to 6:00 pm) Chair: Bernhard Peischl Room: 02.1 o *Test execution infrastructure for IoT quality analysis (Invited Talk)* Axel Rennoch o *Case Study: Adaptive Test Automation for Testing an Adaptive Hadoop Resource Manager* Benedikt Eberhardinger, Hella Ponsar, Gerald Siegert, and Wolfgang Reif o *Adaptive System for Autonomous Driving* Franz Wotawa and Martin Zimmermann o *An Approach for Detecting Critical Adaptations in Automated Adaptive Software Systems* Shuji Morisaki and Norimitsu Kasai o *Formal Transaction Modeling and Verification for an Adaptable Web Service Orchestration* Sara Zatout, Maya Souilah Benabdelhafid, and Mahmoud Boufaida o *Influence Maximization Algorithms Research Based on Big Graphs* Chuanchuan You and Guangqiang Zhang
16:00 – 17:40	• Session VI-E: Blockchain, Smart Contracts, and Digital Society II (Workshop) Chair: Xudong He Room: 02.2 o *A Multiple Blockchains Architecture On Inter-Blockchain Communication* Kan Luo, Wei Yu, Hafiz Muhammad Amjad, Siyuan Wang, Lingchao Gao, and Kai Hu o *Blockchain-based Proof-of-Location* Michele Amoretti, Giacomo Brambilla, Francesco Medioli, and Francesco Zanichelli o *Application of Blockchain to Trade Clearing* Wei-Tek Tsai
19:30 – 22:00	Conference Banquet, Music Performance, and Award Ceremony Museu da Cidade Campo Grande 245, 1700-091 Lisboa (near de Campo Grande metro station)

Thursday, July 19, 2018	
08:00 – 09:00	Registration (Foyer)

09:00 – 10:00	• Keynote Speech III
	  Chair: Rui Maranhao
	  Room: Auditorium
	
	  Perspectives on Dependability and Security Benchmarking: TO BEnchmark OR NOT TO BEnchmark
	  Marco Vieira
	  University of Coimbra, Portugal

10:00 – 10:20	Coffee Break (Foyer)

10:20 – 12:00	• Session VII-A: Program Analysis and Repair
	   Chair: Gilles Perrouin
	   Room: VA1
	
	   o *An Analysis of Complex Industrial Test Code using Clone analysis (S)*
	     Wafa Hasanain, Yvan Labiche, and Sigrid Eldh
	
	   o *A Program Slicing-based Bayesian Network Model for Change Impact Analysis (R)*
	     Ekincan Ufuktepe and Tugkan Tuglular
	
	   o *Automatically Repairing SQL Faults (R)*
	     Yun Guo, Nan Li, Jeff Offutt, and Amihai Motro

10:20 – 12:00	• Session VII-B: Human and Social Aspects of Software Quality I (Workshop)
	  Chair: Ziyuan Wang
	  Room: VA2
	
	   o *Qualitative Software Reliability Requirements: Concept, Classification and Practical Elicitation Methods*
	     Cong Pan, Minyan Lu, Hong Zhang, and Biao Xu
	
	   o *A Method of Optimizing Multi-Locators Based on Machine Learning*
	     Yu Zheng, Song Huang, Zhan-wei Hui, and Ya-Ning Wu
	
	   o *Pinpoint Minimal Failure-inducing Mode Using Itemset Mining under Constraints*
	     Yong Wang, Liangfen Wei, Zhiqiu Huang,Yong Li, Bingwu Fang, and Weiwei Li
	
	   o *Coding Standards and Human Nature*
	     Michael Dorin and Sergio Montenegro

10:20 – 12:00	• Session VII-C: Quality Oriented Engineering III (Workshop)
	  Chair: Yi Yang
	  Room: VA3
	
	   o *Generating Complex Paths for Testing from An EFSM*
	     Ana Turlea, Florentin Ipate, and Raluca Lefticaru
	
	   o *A Data-driven Smart Fault Diagnosis method for Electric Motor*
	     Xiaodong Gou, Chong Bian, Fuping Zeng, Qingyang Xu, Wencai Wang, and Shunkun Yang
	
	   o *Simulation Design of Shop Material Supply Based on Queuing Theory*
	     Shengqi Guo and Min Huang

10:20 – 12:00	• Session VII-D: Model-based Verification and Validation II (Workshop)
	  Chair: Mario Winter
	  Room: 02.1

	o *Model-Based Crawling Rich Internet Applications for Security Testing (Invited Talk)* Guy-Vincent Jourdan o *Regular Expression Based Test Sequence Generation for HDL Program Validation* Onur Kilincceker, Ercument Turk, Moharram Challenger, and Fevzi Belli
10:20 – 12:00	• Session VII-E: Fast Abstract Chair: Jing Guo Room: 02.2 o *Reusable Support for Task-Based Adaptive Navigation* Yonglei Tao o *A proposal for A New Way of Classifying Network Security Metrics. Study of The Information Collected through A Honeypot* Alejandro Carrasco, Jorge Ropero, Paulino Ruiz de Clavijo, Jaime Benjumea, and Amalia Luque o *What Software Quality Characteristics Most Concern Safety-critical Domains?* Fuqun Huang, Yichen Wang, Yikun Wang, and Pengyang Zong o *An AHP-based Risk Assessment for an Industrial IoT Cloud* Yu-Lun Huang and Wen-Lin Sun o *The Research on Optimization of Flame Tube Welding Process Reliability Based on Numerical Simulation* Rui Du, Min Huang, and Yu Zheng
12:00 – 14:00	Lunch Break (Foyer) Poster Session III
14:00 – 15:40	• Session VIII-A: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid I (Workshop) Chair: Yun Lin Room: VA1 o *Research on Abnormal Behavior Detection Technology of Launch Vehicle Controlled Network* Yang Liu, Hongping Xu, Hang Yi, Heng Zhang, Xiaotao Yan, Jian Kang, Tao He, and Weiqiang Xia o *A Complex Network Evolution Model Based on Microscopic Characteristic of Nodes* Yong Wang, Jiahe Cui, Tao Zhang, Jing Yang, and Jianpei Zhang o *A Comparative Analysis of SVM, Naive Bayes and GBDT for Data Faults Detection in WSNs* Ye Yuan, Shouzheng Li, Xingjian Zhang, and Jianguo Sun o *Research on The Node Information Security of WSN Based on Multi-party Data Fusion Algorithm* Hanqi Yin, Zhiming Yin, Yang Yang, and Jianguo Sun
14:00 – 15:40	• Session VIII-B: Human and Social Aspects of Software Quality II (Workshop) Chair: Yong Wang Room: VA2 o *Research on Judicial Data Standard* Zemin Qin, Tieke He, Hao Lian, Yemao Zhou, and Zhenyu Chen

	o *Research on the Information Quality Measurement of Judicial Documents* Hao Lian, Tieke He, Zemin Qin, Yemao Zhou, and Zhenyu Chen o *Test Suite Augmentation via Integrating Black- and White-Box Testing Techniques* Zhiyi Zhang and Ju Qian o *Fault Injection for the Performance Testing of Composite Web Services* Ju Qian, Han Wu, Hao Chen, and Changjian Li
14:00 – 15:40	• Session VIII-C: Reliability and Resilience of Complex Systems I (Workshop) Chair: Ning Wang Room: VA3 o *Service Oriented Resilience Strategy for Cloud Data Center* Yue Liu, Xiaoyang Li, and Lianghua Xiao o *How Does Node Resilience Effect on Complex Network?* Qiang Dong, Chong Jin, Ruiying Li, and Rui Kang o *Space-based Unidirectional Networks and Resiliency* Vaughn Standley and Edward Boucheron o *Dynamic Importance Measure for K-out-of-n System in Presence of Dependent Failure* Dong Lyu and Shubin Si
14:00 – 15:40	• Session VIII-D: Trustworthy Computing (Workshop) Chair: Linghuan Hu Room: 02.1 o *Introduction of a Tool-based Continuous Information Security Management System: An Exploratory Case Study* Michael Brunner, Andrea Mussmann, and Ruth Breu o *A Titration Mechanism Based Congestion Model* Chunlin Wang, Ning Huang, Lina Sun, and Guoyi Wen o *Stateless Multiparty Trust Negotiation Protocol for Distributed Systems* Maha Allouzi and Javed Khan o *An Analysis of Android Malware Behavior* Gagandeep Singh, Fehmi Jaafar, and Pavol Zavarsky
14:00 – 15:40	• Session VIII-E: System Reliability in Cloud Computing and Big Data I (Workshop) Chair: Liang Luo Room: 02.2 o *Service Reliability Oriented Modeling for The Failure of Cloud Data Center* Bang-An Tong, Xiaoyang Li, and Lianghua Xiao o *Predictability of Resource Intensive Big Data and HPC Jobs in Cloud Data Centres* Christopher B. Hauser, Jörg Domaschka, and Stefan Wesner o *Bug Patterns Localization Based on Topic Model for Bugs in Program Loop* Yong Wang, Jun Li, Liangfen Wei, Zhiqiu Huang, Yong Li, and Weiwei Li o *Reliability Evaluation of A Parallel Job With Real-time Redundant Computing* Xiwei Qiu, Liang Luo, Sa Meng, and Han Xu
15:40 – 16:00	Coffee Break (Foyer)

16:00 – 17:40	• Session IX-A: Security, Reliability, and Resilience in Wireless Sensor Networks and Smart Grid II (Workshop)
	Chair: Tao Zhang
	Room: VA1
	
	   o *Industrial Wireless Sensor Network Topology Non-uniform Node Optimization Deployment*
	     Jianguo Sun, Duo Liu, Yiqi Shi, Ye Yuan, and Yang Yang
	
	   o *Research on Cross-Layer Optimization of Smart Grid Demand Side Based on WSNs*
	     Yuan Ren, Shuyu he, Pengyu Hu, and Jianguo Sun
	
	   o *Nonlinear Dynamic Analysis of Air Traffic Flow at Different Temporal Scales: Nonlinear Analysis Approach versus Complex Networks Approach*
	     Chao Wang, Zhaoyue Zhang, and Ming Zhu

16:00 – 17:40	• Session IX-B: Reliability and Resilience of Complex Systems II (Workshop)
	Chair: Shubin Si
	Room: VA2
	
	   o *Study on the Recognition Method of the Equipment State Based on Study on The Mahalanobis-Taguchi System Modified by FDA*
	     Ning Wang, Dawei Hu, and Yingbin Fu
	
	   o *A Hybrid Method of Redundancy System Reliability Analysis based on AADL Models*
	     Yin Lu, Yunwei Dong, Xiaomin Wei, and Mingrui Xiao
	
	   o *Construction of User Concurrent Profile Based On Usage Logs*
	     Yongqiang Zhang, Hong Zhang, Cong Pan, and Chao Feng

16:00 – 17:40	• Session IX-C: Software Engineering and Big Data (Workshop)
	Chair: Shou-Yu Lee
	Room: VA3
	
	   o *Reliability Issues in Large-Scale Network Systems (Invited Talk)*
	     Liang Luo
	
	   o *An Approach to Automatic Test Case Generation for Unit Testing*
	     Pan Liu
	
	   o *Embedded Software Fault Prediction Based on Back Propagation Neural Network*
	     Pengyang Zong, Yichen Wang, and Feng Xie
	
	   o *Personalized Recommender System for Digital Cultural Resources*
	     Shufeng Ye, Yi Yang, Weixing Huang, and Jian Wang
	
	   o *Tag Recommendation for Cultural Resources*
	     Zhiwen Lei, Yi Yang, Weixing Huang, and Jian Wang

16:00 – 17:40	• Session IX-D: System Reliability in Cloud Computing and Big Data II (Workshop)
	Chair: Xiwei Qiu
	Room: 02.1
	
	   o *Task Resource Planning and Verification Method Based on Intelligent Planning*
	     Haiqing Wang and Peng Sun
	
	   o *An Unsupervised Parameter Grouping Algorithm for Combinatorial testing*
	     Peng Sun, Xiaochuan Tang, and Liang Luo

Friday, July 20, 2018	
09:30 – 11:00	• QRS 2019 Planning Meeting (Open to Public) Room: VA1
11:00 – 12:15	Closing Ceremony (Foyer)

Poster Papers Accepted by QRS2018

o *Modeling Topic Propagation on Heterogeneous Online Social Networks*
   Zhang Beibei

o *A Method of Quality Improvement based on Big Quality Warranty Data Analysis*
   Xing Pan, Manli Zhang, and Xi Chen

o *Highly Accelerated Life Test Evaluation Based on Accelerated Growth Model*
   Yuankai Gao, Xiaogang Li, Qi Cai, Niu Lei, and Tianqi Zhang

o *Research on CodeCache Management Strategy Based on Code Heat in Dynamic Binary Translator*
   Fei Deng, Feng Gao, Yunqiang Yan, and Wei Zou

o *A Software Defect Management System Based on Knowledge Base*
   Haiyan Chai, Nan Zhang, Bojiang Liu, and Longli Tang

o *An Advanced and Innovative Cyber-physical System (CPS) for Critical Infrastructures Protection*
   Javier Hingant and Manuel Esteve