

QRS 2020 Session Schedule

All the sessions are based on the time in Macau, China (UTC+8)

- Online track via Zoom
- In-person track at Macau University of Science and Technology (MUST BLOCK N317/N321), China
- Click [HERE](#) for information to log into Zoom meetings
- **Videos of all sessions will be posted on the conference website**

Friday, December 11, 2020		
08:00 – 08:25	Registration	MUST BLOCK N317/N321
08:25 – 08:40	• Opening Ceremony	Zoom
08:40 – 09:40	• Keynote Speech	Zoom
09:40 – 09:50	Break	
09:50 – 11:10	<ul style="list-style-type: none"> • Session I-A: Quality Assurance I (4) • Session I-B: Reliability (4) • Session I-C: Testing (4) • Session I-D: Defect Prediction (4) 	Zoom
09:50 – 10:50	• Session I-E: Blockchain and Smart Contracts (3)	
09:50 – 11:10	• Session I-F: AI for Software Engineering I (4)	
11:10 – 11:20	Break	
11:20 – 12:40	<ul style="list-style-type: none"> • Session II-A: Quality Assurance II (4) • Session II-B: Security (4) 	Zoom
11:20 – 12:20	• Session II-C: Fault Localization and Debugging (3)	
11:20 – 12:40	• Session II-D: Model and Algorithm (4)	
11:20 – 13:00	• Session II-E: Cyber-Physical Systems and IoT (5)	
11:20 – 12:40	• Session II-F: AI for Software Engineering II (4)	

Saturday, December 12, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 09:50	<ul style="list-style-type: none"> • Session III-A: Empirical Study I (4) • Session III-B: Empirical Study II (4) • Session III-C: Empirical Study III (4) • Session III-D: Automated and Intelligent Software Testing I (Workshop) (4) • Session III-E: Data Quality for Intelligent Systems (Workshop) (4) • Session III-F: Human and Social Aspects of Software Quality (Workshop) (4) 	Zoom
09:50 – 10:00	Break	
10:00 – 12:00	<ul style="list-style-type: none"> • Session IV-A: Automated and Intelligent Software Testing II (Workshop) (6) • Session IV-B: Specification, Testing, and Verification for Error Prevention and Detection (Workshop) (6) 	Zoom
10:00 – 11:40	• Session IV-C: Cyber Forensics in Software Engineering (Workshop) (5)	
10:00 – 12:20	<ul style="list-style-type: none"> • Session IV-D: Reliability and Resilience of Complex Systems (Workshop) (7) • Session IV-E: Safety and Security in Cyber-Physical Systems (Workshop) (7) • Session IV-F: Blockchain and Smart Contracts II (Workshop) (7) 	

Sunday, December 13, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 09:50 08:30 – 09:30 08:30 – 09:50	<ul style="list-style-type: none"> • Session V-A: Software Engineering and Knowledge Management I (Workshop) (4) • Session V-B: Software Engineering and Big Data (Workshop) (3) • Session V-C: Predictive Maintenance (Workshop) (3) • Session V-D: Fast Abstract I (4) 	Zoom
09:50 – 10:00	Break	
10:00 – 12:20 10:00 – 11:40	<ul style="list-style-type: none"> • Session VI-A: Software Engineering and Knowledge Management II (Workshop) (7) • Session VI-B: Electrical and Autonomous Vehicle Software (Workshop) (7) • Session VI-C: Fast Abstract II (7) • Session VI-D: System Testing and Validation Workshop (5) 	Zoom
22:00 – 23:00	<ul style="list-style-type: none"> • Mirror Session: System Testing and Validation Workshop (5) 12 minutes each paper <p>Note: 22:00 – 23:00 (Sunday, December 13) (Macau) 08:00 – 09:00 (Sunday, December 13) (US Central Time) 15:00 – 16:00 (Sunday, December 13) (Germany)</p>	Zoom

Monday, December 14, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 10:30	<ul style="list-style-type: none"> • Session VII-A: Creative Lifestyle Computing I (Workshop) (6) • Session VII-B: Creative Lifestyle Computing II (Workshop) (6) 	Zoom
10:30 – 10:40	Break	
10:40 – 12:20 10:40 – 12:00	<ul style="list-style-type: none"> • Session VIII-A: Creative Lifestyle Computing III (Workshop) (5) • Session VIII-B: Creative Lifestyle Computing IV (Workshop) (4) 	Zoom

QRS 2020 Detailed Presentation Schedule

All the sessions are based on the time in Macau, China (UTC+8)

- Online track via Zoom
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Friday, December 11, 2020		
08:00 – 08:25	Registration	MUST BLOCK N317/N321
08:25 – 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"> – Professor Du Zhang, Macau University of Science and Technology, China – Professor Shaoying Liu, Hiroshima University, Japan – Professor Vytautas Bučinskas, Vilnius Gediminas Technical University, Lithuania • Welcome Remarks <ul style="list-style-type: none"> – Humin Lin Honorary General Chair, Chinese Academy of Sciences, China – Carol Graas President, IEEE Reliability Society, USA • Program Chairs <ul style="list-style-type: none"> – Dr. Christof Budnik, Siemens Corporate Technology, USA – Professor Mei Nagappan, University of Waterloo, Canada – Professor W.K. Chan, City University of Hong Kong, China <p>Note: 08:25 Friday (December 11), Macau 19:25 Thursday (December 10), US Eastern Time 18:25 Thursday (December 10), US Central Time 17:25 Thursday (December 10), US Mountain Time 16:25 Thursday (December 10), US Pacific Time</p>	Zoom
08:40 – 09:40	<ul style="list-style-type: none"> • Keynote Speech <p style="text-align: center;"><i>Software Fault Tolerance via Environmental Diversity</i></p> <p>Dr. Kishor Trivedi Hudson Distinguished Professor Department of Electrical and Computer Engineering, Duke University, USA</p>	Zoom
09:40 – 09:50	Break	
09:50 – 11:10 (4 papers)	<ul style="list-style-type: none"> • Session I-A: Quality Assurance I Chair: Linghuan Hu ○ <i>PBLInv: Postcondition-Based Loop Invariant Learning for C Programs</i> [YouTube] Hong Lu, Chengyi Wang, Jiacheng Gui, and Hao Huang ○ <i>Data Evaluation and Enhancement for Quality Improvement of Machine Learning</i> [YouTube] Haihua Chen, Jiangping Chen, and Junhua Ding ○ <i>A Semantic Definition of Faults and Its Implications (S)</i> [YouTube] Besma Khaireddine, Aleksandr Zakharchenko, and Ali Mili 	Zoom

	<ul style="list-style-type: none"> ○ <i>Quality Assurance for Machine Learning – An Approach to Function and System Safeguarding (S)</i> [YouTube] Alexander Poth, Burkhard Meyer, Peter Schlicht, and Andreas Riel 	
09:50 – 11:10 (4 papers)	<ul style="list-style-type: none"> ● Session I-B: Reliability Chair: Dongcheng Li ○ <i>An Improved Mapping Method for Automated Consistency Check between Software Architecture and Source Code</i> [YouTube] Fangwei Chen, Li Zhang, and Xiaoli Lian ○ <i>A Log-Based Anomaly Detection Method with the NW Ensemble Rules</i> [YouTube] Bingming Wang, Shi Ying, Guoli Cheng, and Yiyao Li ○ <i>HARRD: Real-Time Software Rejuvenation Decision based on Hierarchical Analysis under Weibull Distribution (S)</i> [YouTube] Sihang Wang and Jing Liu ○ <i>On the Link between Refactoring Activity and Class Cohesion through the Prism of Two Cohesion-Based Metrics (S)</i> [YouTube] Steve Counsell, Giuseppe Destefanis, Stephen Swift, Mahir Arzoky, and Davide Taibi 	Zoom
09:50 – 11:10 (4 papers)	<ul style="list-style-type: none"> ● Session I-C: Testing Chair: Shou-Yu Lee ○ <i>Multi-Objective Search for Model-Based Testing</i> [YouTube] Rui Wang, Cyrille Artho, Lars Michael Kristensen, and Volker Stolz ○ <i>Architecture for the Automation of Live Testing of Cloud Systems</i> [YouTube] Oussama Jebbar, Ferhat Khendek, and Maria Toeroe ○ <i>Quality-of-Experience Driven Configuration of WebRTC Services through Automated Testing (S)</i> [YouTube] Antonia Bertolino, Antonello Calabrò, Guglielmo De Angelis, Francisco Gortázar, Francesca Lonetti, Michel Maes, and Guiomar Tuñón ○ <i>An Approach to Determine the Optimal k-Value of K-means Clustering in Adaptive Random Testing (S)</i> [YouTube] Jinfu Chen, Lingling Zhao, Minmin Zhou, Yisong Liu, and Songling Qin 	Zoom
09:50 – 11:10 (4 papers)	<ul style="list-style-type: none"> ● Session I-D: Defect Prediction Chair: Zizhao Chen ○ <i>A Multi-objective Learning Method for Building Sparse Defect Prediction Models</i> [YouTube] Xin Li, Xiaoxing Yang, Jianmin Su, and Wushao Wen ○ <i>How Well Just-In-Time Defect Prediction Techniques Enhance Software Reliability?</i> [YouTube] Tian Yuli, Li Ning, Tian Jeff, and Zheng Wei ○ <i>Simplified Deep Forest Model based Just-in-Time Defect Prediction for Android Mobile Apps</i> [YouTube] Kunsong Zhao, Zhou Xu, Tao Zhang, and Yutian Tang ○ <i>Cross-Project Dynamic Defect Prediction Model for Crowdsourced Test (S)</i> [YouTube] Yi Yao, Yuchan Liu, Song Huang, Hao Chen, Jialuo Liu, and Fan Yang 	Zoom

09:50 – 10:50 (3 papers)	<ul style="list-style-type: none"> • Session I-E: Blockchain and Smart Contracts Chair: Yihao Li ○ <i>STAN: Towards Describing Bytecodes of Smart Contract</i> [YouTube] Xiaoqi Li, Ting Chen, Xiapu Luo, Tao Zhang, Le Yu, and Zhou Xu ○ <i>Attack Graph Auto-Generation for Blockchains based on Bigraphical Reaction Systems</i> Lian Yu, Lijun Liu, Yanbing Jiang, Qi Jing, Bei Zhao, and Chen Zhang ○ <i>Early Detection of Smart Ponzi Scheme Contracts based on Behavior Forest Similarity</i> [YouTube] Weisong Sun, Guangyao Xu, Zijiang Yang, and Zhenyu Chen 	Zoom
09:50 – 11:10 (4 papers)	<ul style="list-style-type: none"> • Session I-F: AI for Software Engineering I Chair: Mengya Dou ○ <i>High-Reliability Compilation Optimization Sequence Generation Framework Based ANN</i> [YouTube] Jiang Wu, Jianjun Xu, Xiankai Meng, Zhuo Zhang, Nan Zhang, and Haoyu Zhang ○ <i>Mutation Testing for Artificial Neural Networks: An Empirical Evaluation</i> [YouTube] Lorenz Klampfi, Nour Chetouane, and Franz Wotawa ○ <i>Defect Prediction via LSTM based on Sequence and Tree Structure (S)</i> [YouTube] Xuan Zhou and Lu Lu ○ <i>On the Defect Prediction for Large Scale Software Systems – From Defect Density to Machine Learning (S)</i> Satya Pradhan, Venky Nanniyur, and Pavan Vissapragada 	Zoom
11:10 – 11:20	Break	
11:20 – 12:40 (4 papers)	<ul style="list-style-type: none"> • Session II-A: Quality Assurance II Chair: Linghuan Hu ○ <i>Incorporating Android Code Smells into Java StaticCode Metrics for Security Risk Prediction of Android Applications</i> [YouTube] Ai Gong, Yi Zhong, Weiqin Zou, Yangyang Shi, and Chunrong Fang ○ <i>PHM Technology for Memory Anomalies in Cloud Computing for IaaS</i> [YouTube] Xiwei Qiu, Yuanshun Dai, Peng Sun, and Xin Jin ○ <i>Have It Your Way: Generating Customized Log Data Sets with a Model-Driven Simulation Testbed</i> [YouTube] Max Landauer, Florian Skopik, Markus Wurzenberger, Wolfgang Hotwagner, and Andreas Rauber ○ <i>Revisiting the Impact of Concept Drift on Just-in-Time Quality Assurance (S)</i> [YouTube] Kwabena Ebo Bennin, Nauman Bin Ali, Jurgen Börstler, and Xiao Yu 	Zoom
11:20 – 12:40 (4 papers)	<ul style="list-style-type: none"> • Session II-B: Security Chair: Dongcheng Li ○ <i>Comprehensive Robustness Evaluation of File Systems with Model Checking</i> [YouTube] Jingcheng Yuan, Toshiaki Aoki, and Xiaoyun Guo 	Zoom

	<ul style="list-style-type: none"> ○ <i>Continuous Implicit Authentication through Touch Traces Modelling</i> [YouTube] Thomas Karanikiotis, Michail D. Papamichail, Kyriakos C. Chatzidimitriou, Napoleon-Christos I. Oikonomou, Andreas L. Symeonidis, and Sashi K. Saripalle ○ <i>RTPDroid: Detecting Implicitly Malicious Behaviors under Runtime Permission Model</i> [YouTube] Jie Zhang, Cong Tian, Zhenhua Duan, and Liang Zhao ○ <i>An Intrusion Detection System Integrating Network-Level Intrusion Detection and Host-Level Intrusion Detection (S)</i> [YouTube] Jiannan Liu, Kun Xiao, Lei Luo, Yun Li, and Lirong Chen 	
11:20 – 12:20 (3 papers)	<ul style="list-style-type: none"> ● Session II-C: Fault Localization and Debugging Chair: Shou-Yu Lee ○ <i>A Lightweight Fault Localization Approach based on XGBoost</i> [YouTube] Bo Yang, Yuze He, Huai Liu, Yixin Chen, and Zhi Jin ○ <i>Practical Automatic Lightweight Nondeterminism and Flaky Test Detection and Debugging for Python (S)</i> [YouTube] Alex Groce and Josie Holmes ○ <i>Non-Intrusive Virtual Machine Analysis and Reverse Debugging with SWAT (S)</i> [YouTube] Pavel Dovgalyuk, Ivan Vasiliev, Natalia Fursova, Denis Dmitriev, Mikhail Abakumov, and Vladimir Makarov 	Zoom
11:20 – 12:40 (4 papers)	<ul style="list-style-type: none"> ● Session II-D: Model and Algorithm Chair: Zizhao Chen ○ <i>Pull Request Prioritization Algorithm based on Acceptance and Response Probability</i> [YouTube] Muhammad Ilyas Azeem, Qiang Peng, and Qing Wang ○ <i>Towards Analyzing Contributions from Software Repositories to Optimize Issue Assignment</i> [YouTube] Vasileios Matsoukas, Themistoklis Diamantopoulos, Michail D. Papamichail, and Andreas L. Symeonidis ○ <i>Development Method of Three Kinds of Typical Tree Structure Algorithms and Isabelle-Based Machine Assisted Verification</i> [YouTube] Changjing Wang, Fan Xu, Haimei Luo, Qing Huang, and Zhengkang Zuo ○ <i>On Symbolic Execution of Decompiled Programs (S)</i> [YouTube] Lukáš Korenčík, Petr Ročkai, Henrich Lauko, and Jiří Barnat 	Zoom
11:20 – 13:00 (5 papers)	<ul style="list-style-type: none"> ● Session II-E: Cyber-Physical Systems and IoT Chair: Yihao Li ○ <i>STSL: A Novel Spatio-Temporal Specification Language for Cyber-Physical Systems</i> [YouTube] Tengfei Li, Jing Liu, Jiexiang Kang, Haiying Sun, Wei Yin, Xiaohong Chen, and Hui Wang ○ <i>Reliability Evaluation of FPGA with Common Cause Failure in Multi-Phase Mission</i> [YouTube] Qi Shao, Shunkun Yang, Chong Bian, and Xiaodong Gou ○ <i>Correct and Control Complex IoT Systems: Evaluation of a Classification for System Anomalies (S)</i> [YouTube] Sina Niedermaier, Stefan Heisse, and Stefan Wagner 	Zoom

	<ul style="list-style-type: none"> ○ <i>Process-Variation Effects on 3D TLC Flash Reliability: Characterization and Mitigation Scheme (S)</i> [YouTube] Yuqian Pan, Haichun Zhang, Mingyang Gong, and Zhenglin Liu ○ <i>A Hybrid Interface Recovery Method for Android Kernels Fuzzing</i> [YouTube] Shuaibing Lu, Xiaohui Kuang, Yuanping Nie, and Zhechao Lin 	
11:20 – 12:40 (4 papers)	<ul style="list-style-type: none"> ● Session II-F: AI for Software Engineering II Chair: Mengya Dou ○ <i>Semantic Code Clone Detection Via Event Embedding Tree and GAT Network</i> [YouTube] Bingzhuo Li, Chunyang Ye, Shouyang Guan, and Hui Zhou ○ <i>Convergence based Evaluation Strategies for Learning Agent of Hyper-Heuristic Framework for Test Case Prioritization</i> [YouTube] Jinjin Han, Zheng Li, Junxia Guo, and Ruilian Zhao ○ <i>PEACEPACT: Prioritizing Examples to Accelerate Perturbation-Based Adversary Generation for DNN Classification Testing (S)</i> [YouTube] Zijie Li, Long Zhang, Jun Yan, Jian Zhang, Zhenyu Zhang, and T.H. Tse ○ <i>Research on Ensemble Model of Anomaly Detection Based on Autoencoder (S)</i> [YouTube] Yaning Han, Yunyun Ma, Jinbo Wang, and Jianmin Wang 	Zoom

Saturday, December 12, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> ● Session III-A: Empirical Study I Chair: Linghuan Hu ○ <i>The Characteristics and Impact of Uncompilable Code Changes on Software Quality Evolution</i> [YouTube] Jincheng He, Sitao Min, Kelechi Ogudu, Michael Shoga, Alex Polak, Iordanis Fostiropoulos, Barry Boehm, and Pooyan Behnamghader ○ <i>A Survey of the Use of Test Report in Crowdsourced Testing</i> [YouTube] Song Huang, Hao Chen, Zhanwei Hui, and Yuchan Liu ○ <i>An Empirical Study of Utilization of Imperative Modules in Ansible (S)</i> [YouTube] Shoma Kokuryo, Masanari Kondo, and Osamu Mizuno ○ <i>Preliminary Findings about DevSecOps from Grey Literature (S)</i> [YouTube] Runfeng Mao, He Zhang, Qiming Dai, Huang Huang, Guoping Rong, Haifeng Shen, Lianping Chen, and Kaixiang Lu 	Zoom
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> ● Session III-B: Empirical Study II Chair: Dongcheng Li ○ <i>Which Metrics Should Researchers Use to Collect Repositories: An Empirical Study</i> [YouTube] Kai Yamamoto, Masanari Kondo, Kinari Nishiura, and Osamu Mizuno ○ <i>How Fast and Effectively Can Code Change History Enrich Stack Overflow?</i> [YouTube] Ryujiro Nishinaka, Naoyasu Ubayashi, Yasutaka Kamei, and Ryosuke Sato ○ <i>An Analysis of Utility for API Recommendation: Do the Matched Results Have the Same Efforts?</i> [YouTube] Huidan Li, Rensong Xie, Xianglong Kong, Lulu Wang, and Bixin Li 	Zoom

	<ul style="list-style-type: none"> ○ <i>Interpretable Test Case Recommendation based on Knowledge Graph (S)</i> [YouTube] Chao Wu, Xiufeng Fu, Chen Gao, and Yinyi Song 	
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> ● Session III-C: Empirical Study III Chair: Shou-Yu Lee <ul style="list-style-type: none"> ○ <i>Is There a "Golden" Rule for Code Reviewer Recommendation?: An Experimental Evaluation</i> [YouTube] Yuanzhe Hu, Junjie Wang, Jie Hou, Shoubin Li, and Qing Wang ○ <i>On the Impact of Inter-Language Dependencies in Multi-language Systems</i> [YouTube] Manel Grichi, Mouna Abidi, Fehmi Jaafar, Ellis E. Eghan, and Bram Adams ○ <i>A Practical, Principled Measure of Fuzzer Appeal: A Preliminary Study (S)</i> [YouTube] Miroslav Gavrilov, Kyle Dewey, Alex Groce, Davina Zamanzadeh, and Ben Hardekopf ○ <i>Dissecting Mobile Offerwall Advertisements: An Explorative Study (S)</i> [YouTube] Guosheng Xu, Yangyu Hu, Qian Guo, Ren He, Li Li, Guoai Xu, Zhihui Han, and Haoyu Wang 	Zoom
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> ● Session III-D: Automated and Intelligent Software Testing I (Workshop) Chair: Zizhao Chen <ul style="list-style-type: none"> ○ <i>Efficiency Metrics and Test Case Design for Test Automation</i> [YouTube] Davronzhon Gafurov and Arne Erik Hurum ○ <i>Metamorphic Relations Identification on Chebyshev Rational Approximation Method in the Nuclide Depletion Calculation Program</i> [YouTube] Meng Li, Lijun Wang, Shiyu Yan, Xiaohua Yang, Jie Liu, and Yapin Wan ○ <i>Online Prediction of Server Crash Based on Running Data</i> [YouTube] Zou Zhuoliang and Ai Jun ○ <i>Agent-Based Software Testing: A Definition and Systematic Mapping Study</i> [YouTube] Pavithra Perumal Kumaresen, Mirgita Frasher, and Eduard Enoiu 	Zoom
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> ● Session III-E: Data Quality for Intelligent Systems (Workshop) Chair: Junhua Ding <ul style="list-style-type: none"> ○ <i>Evaluating Interaction Content in Online Learning Using Deep Learning for Quality Classification</i> [YouTube] Lei Wu and Di Wu ○ <i>SemOIR: An Ontology-Based Semantic Information Retrieval System</i> [YouTube] Mingwei Tang, Jiangping Chen, and Haihua Chen ○ <i>Mining Author Identifiers for PubMed by Linking to Open Bibliographic Databases</i> [YouTube] Li Zhang, Yong Huang, Qikai Cheng, and Wei Lu ○ <i>Result Diversification in Clinical Case Reports Retrieval Based on Main Finding</i> [YouTube] Mengqi Luo, Fengchang Yu, and Haihua Chen 	Zoom

<p>08:30 – 09:50 (4 papers)</p>	<ul style="list-style-type: none"> • Session III-F: Human and Social Aspects of Software Quality (Workshop) Chair: Ziyuan Wang ○ <i>Recent Trends in Software Quality Interrelationships: A Systematic Mapping Study</i> [YouTube] Michael Shoga, Celia Chen, and Barry Boehm ○ <i>Towards a Model of Testers' Cognitive Processes: Software Testing as a Problem Solving Approach</i> [YouTube] Eduard Enoiu, Gerald Tukseferi, and Robert Feldt ○ <i>Test Data Augmentation for Image Recognition Software</i> [YouTube] Pu Wang, Zhiyi Zhang, Yuqian Zhou, and Zhiqiu Huang ○ <i>Boosting UI Rendering in Android Applications</i> [YouTube] Subrota Kumar Mondal, Yu Pei, Hong Ning Dai, H M Dipu Kabir, and Jyoti Prakash Sahoo 	<p>Zoom</p>
<p>09:50 – 10:00</p>	<p>Break</p>	
<p>10:00 – 12:00 (6 papers)</p>	<ul style="list-style-type: none"> • Session IV-A: Automated and Intelligent Software Testing II (Workshop) Chair: Linghuan Hu ○ <i>Intelligent Radar Software Defect Prediction Approach and Its Application</i> [YouTube] Xi Liu, Haifeng Li, and Xuyang Xie ○ <i>Graph-Based Vulnerability Detection via Extracting Features from Sliced Code</i> [YouTube] Peng Wu, Liangze Yin, Xiang Du, Liyuan Jia, and Wei Dong ○ <i>Vulnerability Analysis through Interface-Based Checker Design</i> [YouTube] Xiang Du, Liangze Yin, Peng Wu, Liyuan Jia, and Wei Dong ○ <i>Coverage Guided Multiple Base Choice Testing</i> [YouTube] Tugkan Tuglular and Onur Leblebici ○ <i>Calculating Minimal Failure-Causing Schema Based on Relational Tree Model Method</i> [YouTube] Qian Ji, Chiya Xu, and Ziyuan Wang ○ <i>UI Components Recognition System Based on Image Understanding</i> [YouTube] Xiaolei Sun, Tongyu Li, and Jianfeng Xu 	<p>Zoom</p>
<p>10:00 – 12:00 (6 papers)</p>	<ul style="list-style-type: none"> • Session IV-B: Specification, Testing, and Verification for Error Prevention and Detection (Workshop) Chair: Dongcheng Li ○ <i>Improving Spectrum-Based Fault Localization Using Quality Assessment and Optimization of a Test Suite</i> [YouTube] Chang Liu, Chunyan Ma, and Tao Zhang ○ <i>Parallel Stratified Random Testing for Concurrent Programs</i> [YouTube] Canh Minh Do and Kazuhiro Ogata ○ <i>Trace-Based Error Prevention and Detection of Consistency Maintenance via Bidirectional Graph Transformations</i> [YouTube] Soichiro Hidaka ○ <i>Parallelizing Flow-Sensitive Demand-Driven Points-to Analysis</i> [YouTube] Haibo Yu, Qiang Sun, Kejun Xiao, Yuting Chen, Tsunenori Mine, Jianjun Zhao 	<p>Zoom</p>

	<ul style="list-style-type: none"> ○ <i>Specification-Based Test Case Generation with Constrained Genetic Programming</i> [YouTube] Yuji Sato ○ <i>Range Partition Testing: Principle and Technique</i> [YouTube] Shaoying Liu 	
10:00 – 11:40 (5 papers)	<ul style="list-style-type: none"> ● Session IV-C: Cyber Forensics in Software Engineering (Workshop) Chair: Shou-Yu Lee ○ <i>A Practical Solution Against Business Email Compromise (BEC) Attack Using Invoice Checksum</i> [YouTube] Songpon Teerakanok, Hiroaki Yasuki, and Tetsutaro Uehara ○ <i>STAMP S&S: Safety & Security Scenario for Specification and Standard in the Society of AI/IoT</i> [YouTube] Tomoko Kaneko, Nobukazu Yoshioka, and Ryoichi Sasaki ○ <i>Time-Aware Multi-resolutional Approach to Re-identifying Location Histories by Using Social Networks</i> [YouTube] Takuto Ohka, Shun Matsumoto, Masatsugu Ichino, and Hiroshi Yoshiura ○ <i>Trial Development of a Cyber Risk Visualization System with Function of k-Anonymity and Compatibility with Other Organizations</i> [YouTube] Haruki Kobayashi, Taiichi Saito, and Ryoichi Sasaki ○ <i>Risk Assessment Method for Balancing Safety, Security, and Privacy in Medical IoT Systems with Remote Maintenance Function</i> [YouTube] Ryoichi Sasaki 	Zoom
10:00 – 12:20 (7 papers)	<ul style="list-style-type: none"> ● Session IV-D: Reliability and Resilience of Complex Systems (Workshop) Chair: Zizhao Chen ○ <i>A Model-Based RCM Analysis Method</i> [YouTube] Zhibao Mian, Shuli Jia, Xiaodong Shi, Cairong Tang, Junjie Chen, and Yaqing Gao ○ <i>Decomposition of Attributes Oriented Software Trustworthiness Measure Based on Axiomatic Approaches</i> [YouTube] Hongwei Tao, Yixiang Chen, and Hengyang Wu ○ <i>Resilience Evaluation of Complex Networks with Attack Intensity</i> [YouTube] Shubin Si and Ning Wang ○ <i>Research on Safety Modeling and Analysis to the Task Process of Airborne Weather System</i> [YouTube] Haotian Niu, Cunbao Ma, Pei Han, Siyuan Li, Qi Ma, and Shenghui Zhang ○ <i>Reliability Analysis of Phased-Mission K-out-of-n Systems with Cascading Effect</i> [YouTube] Zhiqiang Cai, Mi Zhou, and Shuai Zhang ○ <i>Selection of Network Feature Attribute Based on Classification Discrimination and Correlation Analysis</i> Yang Liu, Hongwei Ma, Kuangdai Li, Hang Yi, Xiaotao Yan, and Jian Kang ○ <i>An Operational Resilience Metric for Modern Power Distribution Systems</i> [YouTube] Tyler Phillips, Timothy McJunkin, Craig Rieger, John Gardner, and Hoda Mehrpouyan 	Zoom

<p>10:00 – 12:20 (7 papers)</p>	<ul style="list-style-type: none"> • Session IV-E: Safety and Security in Cyber-Physical Systems (Workshop) Chair: Min Zhang ○ <i>Research of Micro-Expression Recognition Model Based on Feature Unit</i> [YouTube] Fei Yin, Jinyi Xu, and Yixiang Chen ○ <i>A General and Efficient Framework for Improving Balanced Failure Biasing</i> [YouTube] Shijian Mao, Min Zhang, Jia Yan, and Yao Chen ○ <i>Probabilistic Synthesis for Program with Non-API Operations</i> [YouTube] Yating Zhang, Wei Dong, Daiyan Wang, Jiaxin Liu, and Binbin Liu ○ <i>Cascading Failure Path Prediction Based on Association Rules in Cyber-Physical Active Distribution Networks</i> [YouTube] Chong Wang, Yunwei Dong, Pengpeng Sun, and Yin Lu ○ <i>Rchecker: A CBMC-Based Data Race Detector for Interrupt-Driven Programs</i> [YouTube] Haining Feng, Liangze Yin, Wenfeng Lin, Xudong Zhao, and Wei Dong ○ <i>Security Controller Synthesis for ROS-Based Robot</i> [YouTube] Xudong Zhao, Shaoxian Shu, Yutian Lan, Haining Feng, and Wei Dong ○ <i>An Empirical Study of Flight Control System Model Checking Integrated with FMEA</i> [YouTube] Xinyi Wang, Gaolei Yi, and Yichen Wang 	<p>Zoom</p>
<p>10:00 – 12:20 (7 papers)</p>	<ul style="list-style-type: none"> • Session IV-F: Blockchain and Smart Contracts II (Workshop) Chair: Haiping Xu ○ <i>Modeling and Analyzing Smart Contracts Using Predicate Transition Nets</i> [YouTube] Xudong He ○ <i>Timely Publication of Transaction Records in a Private Blockchain</i> [YouTube] Rui Ming and Haiping Xu ○ <i>Blockchain-Based Solutions for IoT: A Tertiary Study</i> [YouTube] Qianwen Xu, Xiudi Chen, Shanshan Li, He Zhang, Muhammad Ali Babar, and Nguyen Khoi Tran ○ <i>Exchange of Preparatory Information for Secure and Usable Cryptocurrency Transactions</i> [YouTube] Oliver Kattwinkel and Michael Rademacher ○ <i>Blockchain-Based Slice Orchestration for Enabling Cross-Slice Communication at the Network Edge</i> [YouTube] Konstantinos Papadakis-Vlachopapadopoulos, Ioannis Dimolitsas, Dimitrios Dechouniotis, Eirini Eleni Tsiropoulou, Ioanna Roussaki, and Symeon Papavassiliou ○ <i>Mining Power Misestimation in PoW Blockchain</i> [YouTube] Sang-Yoon Chang ○ <i>Secure Storage and Access for Task-Scheduling Schemes on Consortium Blockchain and Inter-Planetary File System</i> [YouTube] Dongcheng Li, W. Eric Wong, Man Zhao, and Qiang Hou 	<p>Zoom</p>

Sunday, December 13, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> • Session V-A: Software Engineering and Knowledge Management I (Workshop) Chair: Linghuan Hu ○ <i>An Improved Comprehensive Evaluation Method for Software Development Ability</i> [YouTube] Xiao Yu, Wenhong Liu, and Jun Yang ○ <i>QMine: A Framework for Mining Quantitative Regular Expressions from System Traces</i> [YouTube] Pradeep Kumar Mahato and Apurva Narayan ○ <i>Application of Improved Fault Localization Method to Stereo Matching Software</i> [YouTube] Jinfeng Li, Yan Zhang, Jilong Bian, Tiejun Li, and Baoying Ma ○ <i>A Lightweight Decision-Tree Algorithm for Detecting DDoS Flooding Attacks</i> [YouTube] Godswill Lucky, Fred Jjunju, and Alan Marshall 	Zoom
08:30 – 09:30 (3 papers)	<ul style="list-style-type: none"> • Session V-B: Software Engineering and Big Data (Workshop) Chair: Dongcheng Li ○ <i>Research and Development of ICT Call Center Data Auxiliary Analysis System Based on Knowledge Discovery</i> [YouTube] Xiangna Li, Zhongping Xu, Xuedong Li, Tao Zhang, Rongrong Zheng, Xiao Han, Chenhui Wang, and Bing Tian ○ <i>Intelligence and Emotion Application Framework in Interactive Art Design</i> Yihang Bo, Zuqiang Yi, and Xi Chen ○ <i>The Optimal Inverter DC/AC Value Selection Method Based on Big Data Technology</i> Ying Wang, Yu Wang, Yongling Tan, Zhuojun Zhong, Mingli Zhang, and Yixuan Zhang 	Zoom
08:30 – 09:30 (3 papers)	<ul style="list-style-type: none"> • Session V-C: Predictive Maintenance (Workshop) Chair: Shou-Yu Lee ○ <i>Optimal Maintenance Policy Considering Innovation Replacement</i> [YouTube] Di Wu, Rui Peng, Shaomin Wu, Ye Ma, and Yingchun Li ○ <i>Predicting Remaining Useful Life with Uncertainty Using Recurrent Neural Process</i> [YouTube] Guozhen Gao, Zijun Que, and Zhengguo Xu ○ <i>An Overview of the EMUs Maintenance Scheduling in China</i> [YouTube] Wenqiang Zheng, Taotao Zhou, and Yan-Fu Li 	Zoom
08:30 – 09:50 (4 papers)	<ul style="list-style-type: none"> • Session V-D: Fast Abstract I Chair: Zizhao Chen ○ <i>Non-Recursive Algorithm Derivation and Formal Proof of Binary Tree Traversal Class Problems</i> [YouTube] Zhengkang Zuo, Yue Fang, Qing Huang, Yunyan Liao, Yuan Wang, and Changjing Wang ○ <i>Towards Prioritizing Vulnerability Testing</i> [YouTube] Simge Demir, Şevval Şimşek, Halit Alptekin, and Cemal Yilmaz 	Zoom

	<ul style="list-style-type: none"> ○ <i>Comprehensive Model-Driven Complexity Metrics for Software Systems</i> [YouTube] Omar Masmali, and Omar Badreddin ○ <i>Effective Iterative Program Synthesis with Knowledge Searched from Internet</i> [YouTube] Jiaxin Liu, Wei Dong, Binbin Liu, Yating Zhang, and Daiyan Wang 	
09:50 – 10:00	Break	
10:00 – 12:20 (7 papers)	<ul style="list-style-type: none"> • Session VI-A: Software Engineering and Knowledge Management II (Workshop) Chair: Linghuan Hu ○ <i>Decision Network: A New Network-Based Classifier</i> [YouTube] Yong Yu, Ming Jing, Jie Li, Na Zhao, and Jinzhuo Liu ○ <i>A Fusion of Java Domain Knowledge Base and Siamese Network for Java API Recommendation</i> [YouTube] Hao Li, Tao Li, Sheng Zhong, Yan Kang, and Tie Chen ○ <i>Specifying and Model Checking Workflows of Single Page Applications with TLA+</i> [YouTube] Gefei Zhang ○ <i>An MILP-NLP Decomposition Approach Applied to a Refinery Scheduling Problem</i> [YouTube] Qianqian Duan ○ <i>Construction of Knowledge Graph for Internal Control of Financial Enterprises</i> [YouTube] Yingying Wang, Jun Zhao, Feng Li, and Min Yu ○ <i>A Threat Analysis Methodology for Security Requirements Elicitation in Machine Learning Based Systems</i> [YouTube] Carl Wilhelm and Awad A Younis ○ <i>Design Method of Banquet Intelligent Side Dishes System Based on Data Mining and Correlation Analysis</i> [YouTube] Xing Qiao and Jie Luo 	Zoom
10:00 – 12:20 (7 papers)	<ul style="list-style-type: none"> • Session VI-B: Electrical and Autonomous Vehicle Software (Workshop) Chair: James Yang ○ <i>Survey of State-of-Art Autonomous Driving Technologies with Deep Learning</i> [YouTube] Yu Huang and Yue Chen ○ <i>Enable an Open Software Defined Mobility Ecosystem Through VEC-OF</i> [YouTube] Sanchu Han, Yong He, and Yin Ding ○ <i>Driver's Perception Model in Driving Assist</i> [YouTube] Renzhi Tang and Zhihao Jiang ○ <i>A Study on Testing Autonomous Driving Systems</i> [YouTube] Xudong Zhang, Yan Cai, and Zijiang Yang ○ <i>Interpretation Area-Guided Detection of Adversarial Samples</i> [YouTube] JiaLi Wei, Ming Fan, Xi Xu, Ang Jia, Zhou Xu, and Lei Xue ○ <i>Formal Verification of CAN Bus in Cyber Physical System</i> [YouTube] Rui Wang, Yong Guan, Xiaojuan Li, and Rui Zhang 	Zoom

	<ul style="list-style-type: none"> ◦ <i>Depth Estimation and Object Detection for Monocular Semantic SLAM Using Deep Convolutional Network</i> [YouTube] Changbo Hou, Xuejiao Zhao, and Yun Lin 	
10:00 – 12:20 (7 papers)	<ul style="list-style-type: none"> • Session VI-C: Fast Abstract II Chair: Shou-Yu Lee ◦ <i>Synthesized Dataset for Search-Based Test Data Generation Methods Focused on MC/DC Criterion</i> [YouTube] Ján Čegiň,, Karol Rástočný, and Mária Bieliková ◦ <i>Reliability Evaluation for a Cloud Computer Network with Fog Computing</i> [YouTube] Yi-Fan Chen, Ding-Hsiang Huang, Cheng-Fu Huang, and Yi-Kuei Lin ◦ <i>Black-Box Testing of Financial Virtual Assistants</i> [YouTube] Iosif Itkin, Elena Treshcheva, Luba Konnova, Pavel Braslavski, and Rostislav Yavorskiy ◦ <i>Towards a Holistic Approach to Medical IoT Forensics</i> Jigang Liu, Ryoichi Sasaki, and Tetsutaro Uehara ◦ <i>Reliability Service Assurance in Public Clouds Based on Blockchain</i> [YouTube] Sa Meng, Liang Luo, Peng Sun, and Yuan Gao ◦ <i>Adaptive Rule Engine for Anomaly Detection in 5G Mobile Edge Computing</i> [YouTube] Peng Sun, Liang Luo, Shangxin Liu, and Weifeng Wu ◦ <i>API Parameter Recommendations Made Effective</i> [YouTube] Wenhua Yang 	Zoom
10:00 – 11:40 (5 papers)	<ul style="list-style-type: none"> • Session VI-D: System Testing and Validation Workshop Chair: Zizhao Chen ◦ <i>Using TDL for Standardised Test Purpose Definitions</i> [YouTube] Philip Makedonski, Ilie-Daniel Gheorghe-Pop, Axel Rennoch, Finn Kristoffersen, Boštjan Pintar, and Andreas Ulrich ◦ <i>TTCN-3 Based NG112 Test System and Playground for Emergency Communication</i> [YouTube] Ramon Barakat, Faruk Catal, Nikolay Tcholtche, and Yacine Rebahi ◦ <i>A Simple, Lightweight Framework for Testing RESTful Services with TTCN-3</i> [YouTube] Theofanis Vassiliou-Gioles ◦ <i>Fuzzing of Mobile Application in the Banking Domain: A Case Study</i> [YouTube] Martin A. Schneider, Marc-Florian Wendland, Abdurrahman Akin, and Serafettin Sentürk ◦ <i>A Performance Benchmarking Methodology for MQTT Broker Implementations</i> [YouTube] Ilie-Daniel Gheorghe-Pop, Alexander Kaiser, Axel Rennoch, and Sascha Hackel 	Zoom
22:00 – 23:00 (5 papers)	<ul style="list-style-type: none"> • Mirror Session: System Testing and Validation Workshop 12 minutes each paper <p>Note: 22:00 – 23:00 (Sunday, December 13) (Macau) 08:00 – 09:00 (Sunday, December 13) (US Central Time) 15:00 – 16:00 (Sunday, December 13) (Germany)</p>	Zoom

Monday, December 14, 2020		
08:00 – 08:30	Registration	MUST BLOCK N317/N321
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> • Session VII-A: Creative Lifestyle Computing I (Workshop) Chair: Hongji Yang ○ <i>BIM Design for Reconstruction of Old Factory Building based on Sustainable Perspective</i> [YouTube] Qian Zhao ○ <i>Smart Scenic Area Construction Framework for Meeting Demands of Multiple Interests Based on Global Tourism Architecture: An Approach to Educating Smart Scenic Area Construction Framework</i> [YouTube] Lei Song and Sirirat Petsangsri ○ <i>Graphical Probability Model and Heritage Tourism Routine Design</i> [YouTube] Fengbao Ma, Sicong Ma, and Qinyun Liu ○ <i>Applying Mobile Technology for Developing Cultural and Creative Products in Tourism: A Case Study on the Forbidden City</i> [YouTube] Lu Zhang, Chi Zhang, and Meiyu Shi ○ <i>A Big Data based Decision Framework for Public Management and Service in Tourism</i> [YouTube] Chi Zhang, Xiangjie Qiao, and Xianfeng Chen ○ <i>Approaching Another Tourism Recommender</i> Xianfeng Chen, Qing Liu, and Xiangjie Qiao 	Zoom
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> • Session VII-B: Creative Lifestyle Computing II (Workshop) Chair: Dongcheng Li ○ <i>Pricing Decision and Greenness Analysis of Green Food in Dual-Channel Supply Chain with Fairness Concern</i> [YouTube] Chuan Zhao, Yan Song, and Min Zuo ○ <i>Character-Word Double-Dimensional Semantic Classification Model for Judging Illegal and Irregular Behaviors for Internet Food Safety</i> [YouTube] Min Zuo, Siyu He, Qingchuan Zhang, and Qingbang Wang ○ <i>Sustainable Food Supply Chain Management and Firm Performance: The Mediating Effect of Food Safety Level</i> [YouTube] Jing Wang, Xiaoyue Yang, and Chongchong Qu ○ <i>A Sentiment Classification Model Based on Bi-directional LSTM with Positional Attention for Fresh Food Consumer Reviews</i> Tong-Qiang Jiang, Xue-Mei Xu, Qing-Chuan Zhang, and Zheng Wang ○ <i>Research on Demand Analysis Model of Hot Product in Food Industry</i> [YouTube] Hao Zhang and Lin An ○ <i>Smart Feeder Robot for Severely Disabled Patients</i> [YouTube] Chihhsiong Shih, Quanen Lai, Huanran Ho, and Cheng-Chung Chu 	Zoom
10:30 – 10:40	Break	
10:40 – 12:20 (5 papers)	<ul style="list-style-type: none"> • Session VIII-A: Creative Lifestyle Computing III (Workshop) Chair: Hongji Yang ○ <i>Best Seller Rank (BSR) to Sales: An Empirical Look at Amazon.com</i> [YouTube] Amit Sharma, Hongrui Liu, and Hongwei Liu 	Zoom

	<ul style="list-style-type: none"> ○ <i>Two Methods for Constructing Independent Spanning Trees in Alternating Group Networks</i> [YouTube] Jie-Fu Huang and Sun-Yuan Hsieh ○ <i>Loop Destroying Algorithm for Generating Creative Solutions Applying in Health Care Area</i> [YouTube] Fengbao Ma, Qinyun Liu, and William ChengChung Chu ○ <i>Microservices: Architecture, Container, and Challenges</i> [YouTube] Guozhi Liu, Bi Huang, Zhihong Liang, Minmin Qin, Hua Zhou, and Zhang Li ○ <i>BCoV: A Covergence of Blockchain and IoV</i> [YouTube] Penggui Huang, Bi Huang, Youjie Zhao, Zhengpin Qiang, and Minmin Qing 	
10:40 – 12:00 (4 papers)	<ul style="list-style-type: none"> ● Session VIII-B: Creative Lifestyle Computing IV (Workshop) Chair: Dongcheng Li ○ <i>Development of a Real 3D Display System</i> [YouTube] Chong Zeng, Weihua Li, Hualong Guo, Tung-Lung Wu, and Dennis Bumsoo Kim ○ <i>A Creative Approach to Humour Degree Calculation for Utterances</i> [YouTube] Tian Liu, Hongji Yang, and Feng-jian Wang ○ <i>Interactive Narrative Generation of Aesthetics of Violence in Films</i> [YouTube] Tao Ma, Hongwei Liu, and Hongji Yang ○ <i>Creative Computing Based Experimental Study of Somatosensory Games for Promoting Intention Understanding</i> [YouTube] Jie Jian, Xiaotong Zhang, and Ping Ma 	Zoom