APSEC 2020 Program
(Singapore Time)

Day 1: 1st December, 2020 (Tue.)

	Workshops

Day 2: 2nd December, 2020 (Wed.)

09:30-09:50	*Opening*	
09:50-10:50	***Keynote I: Trustworthy Software and Automated Program Repair, Prof. Abhik Roychoudhury (National University of Singapore)***	
10:50-11:00	*Break*	

11:00-12:10	**Formal Methods-1 (Session Chair: Minxue Pan)**	**Security, Reliability, & Privacy-1 (Session Chair: Guozhu Meng)**
	75 Yingying Shi, Shengping Xiao, Jianwen Li, Jian Guo and Geguang Pu. SAT-Based Automata Construction for LTL over Finite Traces	33 Kazi Zakia Sultana, Zadia Codabux and Byron Williams. Examining the Relationship of Code and Architectural Smells with Software Vulnerabilities
	78 Mingyue Jiao, Yanhong Huang, Jianqi Shi, Fangda Cai and Rongfeng Lin. Fault Diagnosis of Simplified Fault Trees using State Transition Diagrams	42 Yanxin Zhang, Guanping Xiao, Zheng Zheng, Tianqing Zhu, Ivor Tsang and Yulei Sui. An Empirical Study of Code Deobfuscations on Detecting Obfuscated Android Piggybacked Apps
	54 Duong Dinh Tran, Dang Duy Bui, Parth Gupta and Kazuhiro Ogata. Lemma Weakening for State Machine Invariant Proofs	105 Sandip Ghosal and R. K. Shyamasundar. A Generalized Notion of Non-interference for Flow Security of Sequential and Concurrent Programs

12:10-14:00	*Break*	

14:00-15:30	**Debugging, Defect Prediction & Fault Localisation (Session Chair: Cuiyun Gao)**	**Service-Oriented Computing (Session Chair: In-Yong Ko)**
	35 Wei Yuan, Binhang Qi, Hailong Sun and Xudong Liu. DependLoc: A Dependency-based Framework For Bug Localization	2 Xinjun Mao, Hao Huang and Shuo Wang. Software Engineering for Autonomous Robot: Challenges, Progresses and Opportunities
	49 Bo Lin, Shangwen Wang, Ming Wen, Zhang Zhang, Hongjun Wu, Yihao Qin and Xiaoguang Mao. Understanding the Non-Repairability Factors of Automated Program Repair Techniques	63 Rui Li, Wei Dong, Wanwei Liu and Hao Shi. Synthesizing Cooperative Controllers from Global Tasks of Multi-robot Systems
	65 Zhang Tianhang, Du Qingfeng, Xu Jincheng and Li Jiechu. Software Defect Prediction and Localization with Attention-Based Models and Ensemble Learning	113 Muhammad Waseem, Peng Liang, Gaston Marquez and Amleto Di Salle. Testing Microservices Architecture-Based Applications: A Systematic Mapping Study
	40 Irman Faqrizal and Gwen Salaun. Clusters of Faulty States for Debugging Behavioural Models	114 Ashalatha Kunnappilly, Peter Backeman and Cristina Seceleanu. UML-based Modeling and Analysis of 5G Service Orchestration

15:30-15:40	*Break*	

15:40-17:10	**Formal Methods-2 (Session Chair: Xiaoning Du)**	**Security, Reliability, & Privacy-2 (Session Chair: Ming Fan)**
	68 Ismail Mendil, Neeraj Kumar Singh, Yamine Ait Ameur, Dominique Méry and Philippe Palanque. An Integrated Framework for the Formal Analysis of Critical Interactive Systems	96 Nan Messe, Nicolas Belloir, Vanea Chiprianov, Jamal El Hachem, Regis Fleurquin and Salah Sadou. An Asset-Based Assistance for Secure by Design
	74 Yuwei Ma, Qianying Zhang, Shijun Zhao, Guohui Wang, Ximeng Li and Zhiping Shi. Formal Verification of Memory Isolation for the Trusted Execution Environment	14 Duoyuan Ma, Yude Bai, Zhenchang Xing and Xiaohong Li. A Knowledge Graph-based Sensitive Feature Selection for Android Malware Classification
	67 Wenbo Zhou, Philippe Dague, Lei Liu, Lina Ye and Fatiha Zaidi. A Coloured Petri Nets Based Attack Tolerance Framework	8 Ningning Chen, Huibiao Zhu, Yuan Fei, Lili Xiao and Jiaqi Yin. Modeling and Verifying Data Access Mechanism of NLSR Trust Model
	97 Tengfei Li, Jing Liu, Jiexiang Kang, Haiying Sun and Xiaohong Chen. Model Checking of Spatial Logic	126 Bakheet Aljedaani, Aakash Ahmad, Mansooreh Zahedi and M. Ali Babar. An Empirical Study on Developing Secure Mobile Health Apps: The Developers' Perspective

Day 3: 3rd December, 2020 (Thu.)

11:00-12:30	**Open Source (Session Chair: Chunyang Chen)**	**Software Engineering and AI (Session Chair: Foutse)**
	73 Jaydeb Sarker, Asif Turzo and Amiangshu Bosu. A Benchmark Study of the Contemporary Toxicity Detectors on Software Engineering Interactions	38 Chaojin Wang and Jian Shen. Floating Point Accuracy Verification in Deep Neural Network Computations via Hypothesis Testing
	57 Jacob Stringer, Amjed Tahir, Kelly Blincoe and Jens Dietrich. Technical lag of dependencies in major package managers	44 Lingjun Zhou, Bing Yu, David Berend, Xiaofei Xie, Xiaohong Li, Jianjun Zhao and Zhiyong Feng. An Empirical Study on Robustness of DNNs with Out-of-Distribution Awareness

11:00-12:30	90 Chenhui Feng, Tao Wang, Yue Yu, Yang Zhang, Yanzhi Zhang and Huaimin Wang. Sia-RAE: A Siamese Network based on Recursive AutoEncoder for Effective Clone Detection	82 Lei Shen, Wangshu Liu, Xiang Chen, Qing Gu and Xuejun Liu. Improving Machine Learning-based Code Smell Detection via Hyper-parameter Optimization
	101 Yiwen Wu, Yang Zhang, Tao Wang and Huaimin Wang. Dockerfile Changes in Practice: A Large-Scale Empirical Study of 4,110 Projects on GitHub	
12:30-14:00	*Break*	
	Software Process / Software Engineering Education (Session Chair: Yong Wang)	**Domain-Specific Software Engineering (Session Chair: Qianyu Guo)**
14:00-15:30	3 Hongzhen Zhong, Hai Wan, Weilin Luo, Zhanhao Xiao, Jia Li and Biqing Fang. Structure Similarity of Boundary Conditions and an Efficient Local Search Algorithm for Goal Conflict Identification	77 Sangwon Hyun, Jiyoung Song, Seungchyul Shin, Young-Min Baek and Doo-Hwan Bae. Pattern-based Analysis of Interaction Failures in Systems-of-Systems: a Case Study on Platooning
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	45 Antonio Martini, Terese Besker and Jan Bosch. Process Debt: a First Exploration	
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	Testing, Verification and Validation (Session Chair: Kui Liu)	**Software Architecture (Session Chair: Yun Lin)**
15:40-16:50	15 Canh Minh Do and Kazuhiro Ogata. A divide & conquer approach to testing concurrent programs with JPF	20 Hongyi Zhang, Jan Bosch and Helena Holmström Olsson. Federated Learning Systems: Architecture Alternatives
	36 Lwin Khin Shar, Ta Nguyen Binh Duong, Lingxiao Jiang, David Lo, Wei Minn, Kiah Yong Yeo and Eugene Kim. SmartFuzz: An Automated Smart Fuzzing Approach for Testing SmartThings Apps	109 Meenu Mary John, Helena Holmström Olsson and Jan Bosch. AI Deployment Architecture: Multi-Case Study For Key Factor Identification
	70 Aleksandr Pilgun. Don't trust me, test me: 100% Code Coverage for a 3rd-party Android App	129 Hugo Andrade, Christian Berger, Ivica Crnkovic and Jan Bosch. Principles for Re-architecting Software for Heterogeneous Platforms
17:00-18:00	*Keynote 2: Solidifying the Software Foundations, Pro. Zhendong Su (ETH Zurich)*	
Day 4: 4th December, 2020 (Fri.)		
10:00-11:00	*Keynote 3: Dependable Bidirectional Programming, Pro. ZheJiang Hu (Peking University)*	
	ERA Papers-1 (Session Chair: Shangwei Guo)	**Posters (Session Chair: Yuekang Li)**
11:00-12:10	140 How Weak Reference is Used in Java Projects?	160 Requirement Risk Estimation using TOPSIS Method
	145 Automatically Identify Requirements-oriented Reviews Using A Top-Down Feature Extraction Approach	161 A Program Simplification Method for Generating Test Input Values Using Symbolic Execution
	149 CLIONE: Clone Modification Support for Pull Request Based Development	162 Towards tracking the development process of the server ecosystems using open-source data
	151 Identification of Misleading Location Information in Compiler's Error Messages	164 Feature Combination to Alleviate Hubness Problem of Source Code Representation for Bug Localization
		166 Source Code Obfuscation for Smart Contracts
		169 A Context Based Approach for Recommending Move Class Refactoring
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	ERA Papers-2 (Session Chair: Run Wang)	**Software Applications (Session Chair: Hironori Washizaki)**
14:00-15:10	137 A Formal Model for Behavior Trees Based on Context-Free Grammar	21 Qian Liu, Robert de Simone, Xiaohong Chen and Jing Liu. Multiform Logical Time & Space for Mobile Cyber-Physical System with Advanced Driving Assistance System
	143 A Preliminary Study on Sensitive Information Exposure Through Logging	130 Zhang Zhang, Xinjun Mao, Yao Lu, Shangwen Wang and Jinyu Lu. An Empirical Study on the Influence of Social Interactions for the Acceptance of Answers in Stack Overflow
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	148 Asynchronous test equivalence for probabilistic processes
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	134 An Attentive Deep Supervision based Semantic Matching Framework For Tag Recommendation in Software Information Sites
	154 Ori: A greybox fuzzer for Some/IP protocols in automotive ethernet
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16:30-16:50	*Awards*