

Internetwork 2020 Program (SGT UTC+8)

Day 1: 12 May, 2021 (Wednesday)

08:30 - 09:00

Opening

09:00 - 10:00

Keynote 1: Testing Machine Learning-Enabled Systems, Prof.Lionel C. Briand

10:00 - 10:10

Break

Software Design and Development (Session Chair: Yuting Chen, SJTU)

An Empirical Study of Multi-discussing Pattern in Open-Source Software Development

Cheng Yang (National University of Defense Technology, China), Dongyang Hu (National University of Defense Technology, China), Yang Zhang (National University of Defense Technology, China), Tao Wang (National University of Defense Technology, China), Yue Yu (National University of Defense Technology, China)

An Empirical Study of Architectural Changes in Code Commits

Di Cui (Xi'an Jiaotong University, China), Jiaqi Guo (Xi'an Jiaotong University, China), Ting Liu (Xi'an Jiaotong University, China), Qinghua Zheng (Xi'an Jiaotong University, China)

A Feature Table approach to decomposing monolithic applications into microservices

Yuyang Wei (Nanjing University, China), Yijun Yu (The Open University, United Kingdom), Minxue Pan (Nanjing University, China), Tian Zhang (Nanjing University, China)

10:10 - 11:10

11:10 - 11:20

Break

Short Paper - Oral I (Session Chair: Xiaoning Du, Monash University)

Probabilistic Verification of Neural Networks Against Group Fairness

Bing Sun (Singapore Management University, Singapore), Jun Sun (Singapore Management University, Singapore)

Toward Testing Neural Network Interpretability

Mengdi Zhang (Singapore Management University, Singapore),

BiFF: An Effective Binary Fuzzing Framework with Cross-Architecture Support

Cen Zhang (Nanyang Technological University, Singapore)

Adversarial Attacks of Anomaly Detectors with AI for Cyber-Physical Systems

Yifan Jia (Singapore University of Technology and Design, Singapore)

11:20 - 12:00

12:00 - 14:00

Break

Software Testing (Session Chair: Yiling Lou, PKU)

Enhancing FSCS-ART through Test Input Quantization and Inverted Lists

Muhammad Ashfaq (Jiangsu University, China), Rubing Huang (Jiangsu University, China), Michael Omari (Takoradi Technical University, Ghana)

Testing for Dynamic Software Update: An Object-State-Oriented Approach

Di Huang (Nanjing University, China), Zelin Zhao (Nanjing University, China), Xiaoxing Ma (Nanjing University, China)

GUI testing for mobile applications: objectives, approaches and challenges
Kabir S. Said (Zhejiang Sci-Tech University, China), Liming Nie (Zhejiang Sci-Tech University, China), Adekunle A. Ajibode (Zhejiang Sci-Tech University, China), Xueyi Zhou (Zhejiang Sci-Tech University, China)

Automatically Detecting Defects Related to External Resources in Android Applications
Linna Xie (Nanjing University, China), Yu Pei (The Hong Kong Polytechnic University, China), Minxue Pan (Nanjing University, China), Tian Zhang (Nanjing University, China)

14:00 - 15:20

15:20 - 15:30

Break

Blockchain (Session Chair: Haoyu Wang, BUPT)

Blockchain-based Bidirectional Transformations for Access Control and Data Sharing in EMRs
Tao Zan (Longyan University, China), Zhenjiang Hu (Peking University, China)

Group Activity Matching with Blockchain Backed Credible Commitment
Tianyi Wu (Fudan University, China), Liwei Shen (Fudan University, China), Xin Peng (Fudan University, China), Biao Shen (Fudan University, China), Zhengjie Li (Fudan University, China)

Power Trading Model for Distributed Power Generation Systems Based on Consortium Blockchains
Ran Chen (Kunming Power Exchange Center Co. Ltd., China), Jiabei Zhang (Kunming Power Exchange Center Co. Ltd., China), Fuquan Yuan (Insigma Hengtian Software Ltd., China), Bo Zhou (Zhejiang University, China), Wei Shi (Insigma Hengtian Software Ltd., China), Haiming Zhou (Insigma Hengtian Software Ltd., China)

15:30 - 16:30

Day 2: 13 May, 2021 (Thursday)

09:30 - 10:30

Keynote 2: Smart Contract Security and Fairness: A Tale of Two Contending Parties, Prof. Yi Li

10:30 - 10:40

Break

Fuzzing and Security (Session Chair: Bo Wang, BJTU)

EOSFuzzer: Fuzzing EOSIO Smart Contracts for Vulnerability Detection
Yuhe Huang (Beihang University, China), Bo Jiang (Beihang University, China), W. K. Chan (City University of Hong Kong)

BGNN4VD: Constructing Bilateral Graph Neural-Network for Vulnerability Detection (Journal-First), *Sicong Cao (Yangzhou University, China), Xiaobing Sun (Yangzhou University, China), Lili Bo (Yangzhou University, China), Ying Wei (Yangzhou University, China), Bin Li (Yangzhou University, China)*

Data and Knowledge-driven Named Entity Recognition for Cyber Security
Chen Gao (Yunan University, China), Xuan Zhang (Key Laboratory of Software Engineering of Yunnan Province, China), Hui Liu (Yunan University, China)

10:40 - 11:50

Firmware Fuzzing: The State of the Art (Short Paper)
Chi Zhang (Nanjing University, China), Yu Wang (Nanjing University, China), Linzhang Wang (Nanjing University, China)

11:50 - 14:00

Break

Software Mining (Session Chair: Yan Xiao, NUS)

Self-Attention Networks for Code Search (*Journal-First*)
Sen Fang (Macau University of Science and Technology), Youshuai Tan (Harbin Engineering University, China), Tao Zhang (Macau University of Science and Technology)

Icon2Code: Recommending Code Implementations for Android GUI Components (*Journal-First*)
Yanjie Zhao (Monash University, Australia), Li Li (Monash University, Australia), Xiaoyu Sun (Monash University, Australia), Pei Liu (Monash University, Australia), John Grundy (Monash University, Australia)

Adaptive Code Completion with Meta-learning
Liyu Fang (Nanjing University of Aeronautics and Astronautics, China), Zhiqiu Huang (Nanjing University of Aeronautics and Astronautics, China), Yu Zhou (Nanjing University of Aeronautics and Astronautics, China)

What Makes Open Source Software Projects Impactful: A Data-Driven Approach
Huaiwei Yang (Tianjin University, China), Shuang Liu (Tianjin University, China), Lin Gui (National University of Singapore, Singapore), Yongxin Zhao (East China Normal University, China), Jun Sun (Singapore Management University, Singapore), Junjie Chen (Tianjin University, China)

14:00 - 15:20

15:20 - 15:30

Break

System (Session Chair: Sen Chen, TJU)

Hermes: Efficient Cache Management for Container-based Serverless Computing
Bowen Yan (University of Chinese Academy of Sciences, China), Heran Gao (University of Chinese Academy of Sciences, China), Heng Wu (Institute of Software Chinese Academy of Sciences, China), Wenbo Zhang (Institute of Software Chinese Academy of Sciences, China), Yüewen Wu (Institute of Software Chinese Academy of Sciences, China), Tao Huang (Institute of Software Chinese Academy of Sciences, China)

Simulated or Physical? An Empirical Study on Input Validation for Context-aware Systems in Different Environments
Jinchi Chen (Nanjing University, China), Yi Qin (Nanjing University, China), Huiyan Wang (Nanjing University, China), Chang Xu (Nanjing University, China)

Best Answerers Prediction With Topic Based GAT In Q&A Sites
Yuexin Huang (Beijing Advanced Innovation Center for Big Data and Brain Computing, China), Hailong Sun (Beijing Advanced Innovation Center for Big Data and Brain Computing, China)

Lightweight Map-Enhanced 3D Object Detection and Tracking for Autonomous Driving
Lei Gong (University of Science and Technology of China), Shunhong Wang (University of Science and Technology of China), Yu Zhang (University of Science and Technology of China), Yanyong Zhang (University of Science and Technology of China), Jianmin Ji (University of Science and Technology of China)

15:30 - 16:50

16:50 - 17:00

Break

Short Paper - Oral II (Session Chair: Zhen Dong, NUS)

Towards More Secure and Efficient Smart Contracts
Bo Gao (Singapore University of Technology and Design, Singapore)

Path-Oriented Falsification of Nondeterministic Cyber-Physical Systems
Jiawan Wang (Nanjing University, China), Lei Bu (Nanjing University, China), Shaopeng Xing (Nanjing University, China), Xuandong Li (Nanjing University, China)

17:00 - 17:30 Investigating the Impact of Issue Links on Bug Localization
Di Cui (Xi'an Jiaotong University, China), Xue Ma (Xi'an Jiaotong University, China)

Day 3: 14 May, 2021 (Friday)

09:30 - 10:30 **Keynote 3: Operational Software Quality Assurance for DNNs in the Field, Prof.Xiaoxing Ma**

10:30 - 10:40 Break

Machine Learning (Session Chair: Yuanchun Li, MSRA)

SEDL: A Symmetric Encryption Method Based on Deep Learning
Xiang Li (Tsinghua University, China), Peng Wang (Southeast University, China)

Improving High-impact Bug Report Prediction with Combination of Interactive Machine Learning and Active Learning (Journal-First)
Xiaoxue Wu (Northwestern Polytechnical University, China), Wei Zheng (Northwestern Polytechnical University, China), Xiang Chen (Nantong University, China), Yu Zhao (University of Kentucky, US), Tingting Yu (University of Kentucky, US), Dejun Mu (Northwestern Polytechnical University, China)

Training Deep Code Comment Generation Model via Data Augmentation
Xiaoqing Zhang (Nanjing University of Aeronautics and Astronautics, China), Yu Zhou (Nanjing University of Aeronautics and Astronautics, China), Tingting Han (University of London, United Kingdom), Taolue Chen (University of Surrey, United Kingdom)

10:40 - 12:00 Dynamic Time Window based Reward for Reinforcement Learning in Continuous Integration Testing
Chaoyue Pan (Beijing University of Chemical Technology, China), Yang Yang (Beijing University of Chemical Technology, China), Zheng Li (Beijing University of Chemical Technology, China), Junxia Guo (Beijing University of Chemical Technology, China)

11:55 - 14:00 Break

Infrastructures (Session Chair: Guozhu Meng, IIE.CAS)

TIDY: A PBE-based Framework Supporting Smart Transformations for Entity Consistency in PowerPoint (Journal-First)
Shuguan Liu (Nanjing University, China), Chang Xu (Nanjing University, China)

Exploring the Dependency Network of Docker Containers: Structure, Diversity, and Relationship
Yinyuan Zhang (National University of Defense Technology, China), Yang Zhang (National University of Defense Technology, China), Yiwen Wu (National University of Defense Technology, China), Yao Lu (National University of Defense Technology, China), Tao Wang (National University of Defense Technology, China), Xinjun Mao (National University of Defense Technology, China)

Checking Causal Consistency of MongoDB
Hongrong Ouyang (Nanjing University, China), Hengfeng Wei (Nanjing University, China), Yu Huang (Nanjing University, China)

14:00 - 15:20 Scheduling Distributed Deep Learning Jobs in Heterogeneous Cluster with Placement Awareness
Qingping Li (Sensetime, China), Jingwei Xu (Nanjing University), Chun Cao (Nanjing University, China)

15:20 - 15:30 Break

Programming and Analysis (Session Chair: Lingling Fan, NKU)

SAT and LP Collaborative Bounded Timing Analysis of Scenario-Based Specifications
Longlong Lu (Nanjing University, China), Wenhua Yang (Nanjing University of Aeronautics and Astronautics, China), Minxue Pan (Nanjing University, China), Tian Zhang (Nanjing University, China)

Accelerating Accuracy Improvement for Floating Point Programs via Memory Based Pruning

Anxiang Xiao (Nanjing University, China), Enyi Tang (Nanjing University, China), Xin Chen (Nanjing University, China), Linzhang Wang (Nanjing University, China)

Overwhelming Uncertainty in Self-adaptation: An Empirical Study on PLA and CobRA

Jingxin Fan (Nanjing University, China), Yanxiang Tong (Nanjing University, China), Yi Qin (Nanjing University, China), Xiaoxing Ma (Nanjing University, China)

ASPDup: AST-Sequence-based Progressive Duplicate Code Detection Tool for Onsite Programming Code (Short Paper)

Yaoshen Yu (Nanjing University of Aeronautics and Astronautics, China), Zhiqiu Huang (Nanjing University of Aeronautics and Astronautics, China), Yu Zhou (Nanjing University of Aeronautics and Astronautics, China), Weiwei Li (Nanjing University of Aeronautics and Astronautics, China), Yichao Shao (Nanjing University of Aeronautics and Astronautics, China)

15:30 - 16:40