

DSA 2020 Conference Program

All the sessions are based on the time in Beijing, China (UTC+8)
Information for Zoom meeting via PC Laptop, Apple computers, iPad, Cell Phone

Attendees have two options:

- (1) click the above links via a web browser
- (2) download and install the client side of Zoom on their devices and open Zoom by entering the Meeting ID

- **Day 1 (November 28, Saturday): 7:30 am – 1:30 pm**

Common Session & Session V-A

<https://us02web.zoom.us/j/89354434872?pwd=b2N4Nm01a21RK0hqV0k2SnFPbC82Zz09>
Meeting ID: 893 5443 4872
Passcode: DSA2020

Session V-B

<https://us02web.zoom.us/j/85432197403?pwd=a3gzUGN1dkpMNWkxT3RiOWxKZ1Q5dz09>
Meeting ID: 854 3219 7403
Passcode: DSA2020

Session V-C

<https://us02web.zoom.us/j/84475474037?pwd=K2I5SkdoK3p4WUZZQ0VhdmpycFowUT09>
Meeting ID: 844 7547 4037
Passcode: DSA2020

- **Day 2 (November 29, Sunday): 7:30 am – 1:30 pm**

Sections VI-A and VII-A

<https://us02web.zoom.us/j/88032444564?pwd=d0NIYTJFcGhiL1pkeEs4VVpBL3lDdz09>
Meeting ID: 880 3244 4564
Passcode: DSA2020

Sections VI-B and VII-B

<https://us02web.zoom.us/j/87359456246?pwd=ZWs0TktMS2NyeIgrTFVISGlwT3podz09>
Meeting ID: 873 5945 6246
Passcode: DSA2020

Sections VI-C and VII-C

<https://us02web.zoom.us/j/83453979817?pwd=UDNNU0tpWFFDZXVqbjYrM0ozQ0cwZz09>
Meeting ID: 834 5397 9817
Passcode: DSA2020

Sections VI-D and VII-D

<https://us02web.zoom.us/j/82532183412?pwd=S1dobjM2TIF4Z2IvVTc0ZytURUtJdz09>
Meeting ID: 825 3218 3412
Passcode: DSA2020

DSA 2020 Track/Session Schedule

DSA 2020 Common Sessions (In-person & Online)

Saturday, November 28, 2020		
08:00 – 08:25	Registration	古都文化大酒店
08:25 – 08:40	Opening Ceremony	Zoom
08:40 – 09:20	Keynote Speech I	Zoom
09:20 – 09:30	Break	

DSA 2020 In-Person Track

Saturday, November 28, 2020		
09:30 – 09:40	Remarks	古都文化大酒店
09:40 – 10:30	Keynote Speech II	古都文化大酒店
10:30 – 11:15	Keynote Speech III	古都文化大酒店
11:15 – 12:00	Keynote Speech IV	古都文化大酒店
12:00 – 13:30	Lunch Break	古都文化大酒店
13:30 – 15:30	Session I	古都文化大酒店
15:30 – 15:50	Coffee Break	古都文化大酒店
15:50 – 17:50	Session II	古都文化大酒店
17:50 – 18:00	Break	古都文化大酒店
18:00 – 20:30	Conference Banquet	古都文化大酒店

Sunday, November 29, 2020		
08:00 – 08:30	Registration	古都文化大酒店
08:30 – 10:30	Session III	古都文化大酒店
10:30 – 10:50	Break	古都文化大酒店
10:50 – 12:50	Session IV	古都文化大酒店
12:50 – 14:00	Lunch	古都文化大酒店
14:00	Adjourn	

DSA 2020 Online Track

Saturday, November 28, 2020		
9:30 – 11:30	Session V-A Session V-B Session V-C	Zoom

Sunday, November 29, 2020		
08:30 – 10:30	Session VI-A Session VI-B Session VI-C Session VI-D	Zoom
10:30 – 10:40	Break	
10:40 – 12:40	Session VII-A Session VII-B Session VII-C Session VII-D	Zoom
12:40	Adjourn	

DSA 2020 Common Sessions (In-person & Online)

Saturday, November 28, 2020		
08:00 – 08:25	Registration	古都文化大酒店
08:25 – 08:40	Opening Ceremony <ul style="list-style-type: none"> • Steering Committee Chair <ul style="list-style-type: none"> – W. Eric Wong (University of Texas at Dallas, USA) • General Chairs <ul style="list-style-type: none"> – Yunwei Dong (Northwestern Polytechnical University, China) – Weizhe Zhang (Peng Cheng Laboratory, Harbin Institute of Technology, China) • Welcome Remarks <ul style="list-style-type: none"> – Carole Graas (President of IEEE Reliability Society, USA) • Program Chairs <ul style="list-style-type: none"> – Yin Lu (Northwestern Polytechnical University, China) – Fan Zhang (Peng Cheng Laboratory, China) – Tadashi Dohi (Hiroshima University, Japan) – Jinbo Wang (Chinese Academy of Sciences, China) 	Zoom
08:40 – 09:20	<ul style="list-style-type: none"> • Keynote Speech I <p style="margin-left: 20px;"><i>The Push to Product - Strategies for Taking Your Research into Practice</i></p> <p style="margin-left: 20px;">Professor David Shepherd Editor-in-Chief, Journal of Systems and Software Virginia Commonwealth University</p> 	Zoom
09:20 – 09:30	<ul style="list-style-type: none"> • Break 	

DSA 2020 In-Person Track

Saturday, November 28, 2020		
09:30 – 09:40	Chair: Professors Yunwei Dong <ul style="list-style-type: none"> • Host welcome Professor Xingshe Zhou Northeastern Polytechnical Universities 	古都文化大酒店
09:40 – 10:30	<ul style="list-style-type: none"> • Keynote Speech II <i>Safety and Privacy Matter for Human Cyber-Physical Space Systems! How to Build in Dependable Autonomy</i> Professor Zhi Jin Peking University 	古都文化大酒店
10:30 – 11:15	<ul style="list-style-type: none"> • Keynote Speech III <i>Theory of Modeling and Software Defined Human-Cyber-Physical Systems</i> Professor Zhiming Liu Southwest University, Chongqing 	古都文化大酒店
11:15 – 12:00	<ul style="list-style-type: none"> • Keynote Speech IV <i>Verification of Onboard Autonomous Mission Planning and Scheduling Software</i> Professor Bin Gu Institute of Beijing Aerospace Controlling Technology 	古都文化大酒店
12:00 – 13:30	Lunch	古都文化大酒店
13:30 – 15:30 (6 papers)	<ul style="list-style-type: none"> • Session I Chair: Fang Zhang <ul style="list-style-type: none"> ○ <i>Intelligent Detumbling Control for a Micro-Satellite with Bounded Inputs</i> Yucheng Cui and Zhiyu Xi ○ <i>Fast Test Method of Intelligent Image Recognition System Based on Antagonistic Samples</i> Lilei Zhang, Jinyong Yao, and Kai Wang ○ <i>Analysis on Adversarial Robustness of Deep Learning Model LeNet-5 Based on Data Perturbation</i> Yudi Liu, Jun Ai, Jie Wang, and Minyan Lu ○ <i>An Empirical Study of Counterexample-Guided Fuzzing for Neural Networks Verification</i> Gaolei Yi, Xinyi Wang, and Yichen Wang ○ <i>The Quantitative Relationship Between Adversarial Training and Robustness of Cnn Model</i> Jie Wang, Minyan Lu, and Jun Ai ○ <i>Software Quality Measurement Combining Autonomy Evaluation for Intelligent Early-Warning Information System</i> Xinlei Zheng and Xi Liu 	古都文化大酒店
15:30 – 15:50	Break	古都文化大酒店

15:50 – 17:50 (6 papers)	<ul style="list-style-type: none"> • Session II Chair: Yin Lu ○ <i>EFSM Test Data Generation Based on Fault Propagation and Multi-Population Genetic Algorithm</i> Zhiqin Cao, Yichen Wang, Peng Guo, and Bo Tian ○ <i>KBAA: An Adversarial Example Generation Method for KBQA Task</i> Shudi Guo, Bin Liu, Shihai Wang, and Tengfei Shi ○ <i>Knowledge-Based Defect Prediction and Test Case Generation for Radar Software Fault Prevention</i> Chengfeng Li, Xi Liu, Hui Wu, and Haifeng Li ○ <i>Correlation Analysis Between Software Structure Measures and Error Execution Path Deviation</i> Shiyi Kong, Minyan Lu, Chao Tang, and Shuguang Wang ○ <i>Embedded Virtualization Computing Platform Security Architecture Based on Trusted Computing</i> Shuang Zhang, Xinyu Wan, Deqi Kong, and Yangming Guo ○ <i>An Intelligent Combination Algorithm for Traffic Flow Prediction</i> Cheng Li, Liang Kou and Xu Zhang 	古都文化大酒店
17:50 – 18:00	Break	古都文化大酒店
18:00 – 20:30	Conference Banquet	古都文化大酒店

Sunday, November 29, 2020		
08:00 – 08:30	Registration	古都文化大酒店
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> • Session III Chair: Yin Lu ○ <i>Performance Optimization Method of PBFT Consensus for Supply Chain Integration SVM</i> Na Du, Zhihong Liang, Yuxiang Huang, Zhichang Guo, Hongji Yang, and SaSa Wang ○ <i>The Architecture of Security Protection Technology for Aviation Cyberspace</i> Zhonghua Wang, Jianfeng Ma, Wensheng Niu, and Yahui Li ○ <i>A Real-Time Information Exchange Strategy for Big Data Volume Systems Based on Internet of Things</i> Limin Zhang, Giap Weng Ng, and Yu-Beng Leau ○ <i>Design and Implementation of Protocol Processing Model Based on Responsibility Chain and Reflection Mechanism</i> Xiangfei Gao and Feng Gao ○ <i>Security Testing of Unmanned Flight System</i> Xiaoting Meng and Lili Yu ○ <i>Applications of LSTM Model for Aeroengine Forecasting</i> Peng Li and Wei Niu 	古都文化大酒店
10:30 – 10:50	Break	古都文化大酒店

10:50 – 12:50 (6 papers)	<ul style="list-style-type: none"> • Session IV Chair: Yin Lu <ul style="list-style-type: none"> ○ <i>Distilling Knowledge in Adversarial Attack</i> Zeqian Dong, Cong Tian, and Long Tang ○ <i>Generating Adversarial Examples in Limited Queries with Image Encoding and Noise Decoding</i> Long Tang, Bin Yu, and Hao Chen ○ <i>AdaBoost-Based Refused Bequest Code Smell Detection with Synthetic Instances</i> Hao Chen, Zhilei Ren, Lei Qiao, Zhide Zhou, Guojun Gao, Yue Ma, and He Jiang ○ <i>An Empirical Study of Exploring Relevant Metrics to Assess Software Product Quality</i> Zekun Song, Yichen Wang, Wentao Wang, and Jing Zhang ○ <i>Load Balancing Evaluation of Multi-Core Processors Based on Bmp Architecture</i> Yueyao Niu, Wei Han, Xiaodi Dai, and Yukai Hao ○ <i>Simulation Verification Technology of Virtual-Real-Integration Avionics System</i> Xining Cui, Yukai Hao, Xiaodi Dai, and Yueyao Niu 	古都文化大酒店
12:50 – 14:00	Lunch	古都文化大酒店
14:00	Adjourn	

DSA 2020 Online Track

Saturday, November 28, 2020		
9:30 – 11:30 (6 papers)	<ul style="list-style-type: none"> • Session V-A Chair: Linghuan Hu ○ <i>Face Determination Based on Multi-Template and Convolution</i> Danmei Wang ○ <i>Lightweight Convolutional Neural Network-Based Method for Crane Safety Inspection</i> Wei Jiang, Quan Chen, Xixi Zhang, Tianliang Liu, and Guan Gui ○ <i>Implementation of Mesh Flying Ad-Hoc Network for Emergency Communication Systems</i> Yuzhi Zhou, Xi-Xi Zhang, Jinlong Sun, Jie Yang, and Guan Gui ○ <i>Deep Learning-Based Automatic Safety Detection System for Crack Detection</i> Quan Chen, Xi-Xi Zhang, Yu Chen, Wei Jiang, Guan Gui, and Hikmet Sari ○ <i>The Evaluation Method of Speech Interference Effect Based on Deep Learning</i> Hengfeng Fu and Sen Wang ○ <i>Non-Convex Low-Rank Minimization for Sparse-View CT Reconstruction via Nonlocal-Group Dictionary Learning</i> Li Liu, Peipei Yang, Tian Zhou, Yunyi Li, Wenmei Li, and Guan Gui 	Zoom
9:30 – 11:30 (6 papers)	<ul style="list-style-type: none"> • Session V-B Chair: Dongcheng Li ○ <i>An Evolutionary Perspective: A Study of Anubis Android Banking Trojan</i> Baodi Ning, Guanqin Zhang, and Zexin Zhong ○ <i>Design of A Center of Gravity Control Law with Unbalanced Fuel in Aircraft Wing Tanks</i> Ying Zhao, Zhongwei Wang, Zhenghong Li, Rui Xu, and Enliang Ding ○ <i>Developing Deep LSTM Model for Real-Time Path Planning in Unknown Environments</i> Haonan Yao, Yang Liu, and Xiaoyi Zhang ○ <i>The Knowledge Ontology Model of Attribute-Oriented Airworthiness Review Compliance Activities</i> Zhu Yu-Ping, Shao Jun, Cai Yong, and Shen Yue ○ <i>Design of Multi-Unmanned Platform Collaborative Demonstration Environment</i> Jiang Wu, Yipeng Liu, Xin Gao, Lin Deng, Lei Guo, and Xinyu Zhang ○ <i>Artemis: An Improved Smart Contract Verification Tool for Vulnerability Detection</i> Anqi Wang, Hao Wang, Bo Jiang, and W.K. Chan 	Zoom
9:30 – 11:30 (6 papers)	<ul style="list-style-type: none"> • Session V-C Chair: Shou-Yu Lee ○ <i>Test Suite Generation for Software Reliability Testing Based on Hybrid Musa And Markov Method</i> Yin Li and Tingting Jiang 	Zoom

	<ul style="list-style-type: none"> ○ <i>Radar Signal Separation and Recognition Based on Semantic Segmentation</i> Changbo Hou, Lijie Hua, Guowei Liu, and Yun Lin ○ <i>Multimodal Feature Fusion Recognition of Modulated Signals Based on Image and I/Q Waveform Domain</i> Changbo Hou, Guowei Liu, Lijie Hua, and Yun Lin ○ <i>Similar Flight Numbers of LD Algorithm</i> Chaohui Feng, Zhe Cui, Guangxiang Yang, Zhisen Wang, and Xianxi Yang ○ <i>Characteristics of Aircraft Traffic Flow in Airport Surface</i> Zhe Cui, Zhisen Wang, Xianxi Yang, Chaohui Feng And Guangxiang Yang ○ <i>Reliable Multiview Learning for Spectral Clustering</i> Jiajia Chen, Ying Wang, Ao Li, and Kezheng Lin 	
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Sunday, November 29, 2020		
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> ● Session VI-A Chair: Linghuan Hu ○ <i>Evolutionary-Based Cluster Test Suite Reduction</i> Chunyan Xia, Yan Zhang, and Zhanwei Hui ○ <i>An Efficient Approach Based on Parameter Optimization for Network Traffic Classification Using Machine Learning</i> James Msughter Adeke, Jinfu Chen, Lei Zhang, and Richard Nana Kojo Mensah ○ <i>On Vulnerability Analysis of Nodes Against Cross-Domain Cascading Failures Propagation in Active Distribution Network Cyber-Physical System</i> Pengpeng Sun and Yunwei Dong ○ <i>VSFBS: Vulnerability Search in Firmware Based on String</i> Zhibin Zhang, Dian Zhou, Jiqing Rao, Dongdong Zhao, Wenhua Hu, Jianwen Xiang, Zhongjin Liu, and Yanzhen Xing ○ <i>The Airborne Information Processing System Development Research</i> Xie Jianchun, Li Yahui, Wang Zhonghua, and Bai Linting ○ <i>Reliability Analysis of Dynamic Fault Trees with Priority-AND Gates Based on Irrelevant Coverage Models</i> Siwei Zhou and Jianwen Xiang 	Zoom
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> ● Session VI-B Chair: Dongcheng Li ○ <i>FIG-QEMU: A Fault Inject Platform Supporting Full System Simulation</i> Jianfeng An ○ <i>A Survey on NFC Mobile Payment: Challenges and Solution Using Blockchain and Cryptocurrency</i> Dongcheng Li, Eric Wong, Matthew Chau, Sean Pan, and Liang Seng Koh 	Zoom

	<ul style="list-style-type: none"> ○ <i>Reliable and Robust Weakly Supervised Attention Networks for Surface Defect Detection</i> Zijian Zhang, Chaozhang Lv, and Zheng Wang ○ <i>A Rapid Test Method for Autonomous Ability of Unmanned Control Strategy in Dangerous Situations</i> Lingzhong Meng, Yang Bao, Shuting Kang, Guang Yang, Yuan Shi, Pengqi Wang, Qian Dong, and Yunzhi Xue ○ <i>Software Reconfiguration Scheme Based on NSGA-II Algorithm</i> Defei Hou, Yongfeng Yin, Qingran Su, and Lijun Liu ○ <i>Metamorphic Robustness Testing for Recommender Systems: A Case Study</i> Chengying Mao, Xiaorong Yi, and Tsong Yueh Chen 	
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> ● Session VI-C Chair: Shou-Yu Lee ○ <i>Task-Driven Image Preprocessing Algorithm Evaluation Strategy</i> Pengqi Wang, Lin Geng, Shuting Kang, Qian Dong, Guang Yang, Yuan Shi, Lingzhong Meng, and Yunzhi Xue ○ <i>A Coverage-Based Effective Data Augmentation Framework for Neural Network Robustness</i> Shuting Kang, Tong Wang, Pengqi Wang, Feng Wang, Qian Dong, Guang Yang, Lingzhong Meng, and Yunzhi Xue ○ <i>System Vulnerability Oriented to Game Theory</i> Yu Xin and Xiaohong Bao ○ <i>A Middle Layer Abstraction-Based Open Platform for V2X Safety and Application Study</i> Jin Yang, Baoling Sheen, and Juan Roa ○ <i>A Formal Verification Method for Smart Contract</i> Xiaobing Wang, Xiaoyu Yang, and Chunyi Li ○ <i>Test Sequence Generation of Time-Triggered Ethernet Using Genetic Algorithm</i> Yongfeng Yin, Xuefeng Wang And Qingran Su 	Zoom
08:30 – 10:30 (6 papers)	<ul style="list-style-type: none"> ● Session VI-D Chair: Zizhao Chen ○ <i>Heart Disease Prediction Algorithm Based on Ensemble Learning</i> Ke Yuan, Yabing Huang, Longwei Yang, and Zheng Li ○ <i>Data Link Network Technology of UAV System</i> Zhe Li and Zhijun Deng ○ <i>Research and Implementation of An Automatic Simulation Tool</i> Liu Tang, You Li, Hongwei Wang, Huan Zhao, Luze Ma, and Yuming Sun ○ <i>An Intrusion Detection Method for Industrial Control System against Stealthy Attack</i> Qi Ao ○ <i>Fault Diagnosis for Open Source Software Based on Dynamic Tracking</i> Xuliang Chen, Jianhui Jiang, Wei Zhang And Xuzei Xia 	Zoom

	<ul style="list-style-type: none"> ○ <i>The Test Process Date Based Quality Defect Detection Strategy for Spacecraft Components</i> Taichun Qin, Shouwen Liu, Shouqing Huang And Yuege Zhou 	
10:30 – 10:40	Break	
10:40 – 12:40 (6 papers)	<ul style="list-style-type: none"> ● Session VII-A Chair: Linghuan Hu ○ <i>Testing DNN-Based Path Planning Algorithms by Metamorphic Testing</i> Shuxiao Lv and Beibei Yin ○ <i>An Empirical Study on the Impact of the Interaction Between Feature Selection and Sampling in Defect Prediction</i> Shuyue Fan and Chun Liu ○ <i>Aging-Related Bugs Prediction via Convolutional Neural Network</i> Qinchen Liu, Dongdong Zhao, Bin Xu, Wenhua Hu, and Jianwen Xiang ○ <i>Safety Argument Pattern Language of Safety-Critical Software</i> Shuanqi Wang, Zhibo Li, Xin He, Ke Sheng, Jingxuan Zhou, and Wei Wu ○ <i>A Malware Identification Approach Based on Improved SVM In Network Traffic</i> Songling Qin, Jinfu Chen, Zufa Zhang, Yisong Liu, Lingling Zhao, Bo Liu, and Jingyi Chen ○ <i>DI Model Publishing Platform</i> Haoyang Tong, Yanjun Tong, and Jing Zhao 	Zoom
10:40 – 12:40 (6 papers)	<ul style="list-style-type: none"> ● Session VII-B Chair: Dongcheng Li ○ <i>Software Defect Classification Approach Based on The Modified Latent Dirichlet Allocation Topic Model with Domain Characters</i> Junruo Sun, Huancheng Su, Haifeng Li, Chang Liu, Jiabin Chen, and Xi Liu ○ <i>FPGA Physical Automation Verification Technology Based on VCD Waveform</i> Shouquan Xu ○ <i>Summary of Tools for FPGA'S Static Timing Analysis</i> Xubing Wang, Jing You, and Zhijie Yu ○ <i>An Empirical Study of Law Articles Prediction on Transportation Legal Cases</i> Yifei Yang, Wei Yuan, Yansong Li, Desheng Wang, Jia Liu, and Tieke He ○ <i>Problem Kit System for Expression Ability Evaluation</i> Desheng Wang, Yubo Qian, Yu Xing, Yansong Li, Yifei Yang, Qing Wu, and Tieke He ○ <i>Design and Implementation of Test System for Expression Ability Evaluation</i> Yansong Li, Yu Xing, Yubo Qian, Desheng Wang, Yifei Yang, Qing Wu, and Tieke He 	Zoom

<p>10:40 – 12:20 (5 papers)</p>	<ul style="list-style-type: none"> • Session VII-C Chair: Shou-Yu Lee ○ <i>Sonar Cross Section Recovery Method Based on Pole Features of Underwater Target</i> Ziqi Zhou, Yang Li, Bowang Jiang, Kaiyang Liu, Yingzi Wu, and Yanni Wu ○ <i>Interference Signal Recognition Based on Multi-Modal Deep Learning</i> Zhang Xiao and Liu Xiaoling ○ <i>Evaluation of Adversarial Attacks Based on DI in Communication Networks</i> Zhida Bao and Haojun Zhao ○ <i>Reconstruction of Smart Learning Space Based on Digital Twin (Dt) Technology</i> Lei Song ○ <i>Parametric Software Defect Patterns Based on Test Perspective</i> Binbing Gu 	<p>Zoom</p>
<p>10:40 – 12:20 (5 papers)</p>	<ul style="list-style-type: none"> • Session VII-D Chair: Zizhao Chen ○ <i>DSR: A Deep Learning Framework Towards Modulation Signal Retrieval</i> Xueli Jie and Yun Lin ○ <i>Fault Diagnosis of Rolling Bearings Based on Fractal Dimension</i> Zhe Shen, Jingchao Li, Jialan Shen, and Bin Zhang ○ <i>Fault Diagnosis Method of Equipotential Planet Map Based on Fusion Features</i> Rui Wang, Jingchao Li, Bo Deng, and Bin Zhang ○ <i>Detecting Out-of-Bounds Array Access Errors in Aerospace Embedded Software</i> Rui Chen, Tingting Yu, Yunsong Jiang, Chunpeng Jia, Chao Li, Dongdong Gao, and Mengfei Yang ○ <i>A Smart Meter-Reading Framework with Secret Key Sharing and Support Vector Machine Algorithms</i> Zhou Yang and Jueyu Chen 	<p>Zoom</p>
<p>12:40</p>	<p>Adjourn</p>	<p>.....</p>