Jieke Shi

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Education & Experience

Singapore Management University • School of Computing and Information Systems — Singapore
Research Engineer & Ph.D. Student — 2021.06-Present

- Research work on Software Engineering supervised by Prof. David Lo
- Participated in projects about code completion, bug localization, language model of code and AI testing.
- Co-authored 7 papers accepted in major/top Software Engineering conferences.

Chinese Academy of Sciences • Institute of Computing Technology — Beijing, China
NLP Research Assistant Intern — 2020.07-2021.04

- Research work on text generation supervised by Dr. Shi Wang
- Participated in a project about readable text generation from tabular data.

Yangzhou University • School of Information Engineering — Yangzhou, China
B.Eng., Electronic and Information Engineering — 2016.09-2020.06

- Average Score 83/100, Top 10%.
- Research work on Multi-agent Systems, published 6 papers supervised by Prof. Junwu Zhu.
- Honored as Outstanding Graduate for excellent academic achievements.

Fudan University • Cooperative Information and Systems Lab — Shanghai, China
CSCW & Social Computing Summer School — 2019.08

Publications

Conference:

[1] Chen Gong, Zhou Yang, Yunpeng Bai, Jieke Shi, Arunesh Sinha, Bowen Xu, David Lo, Xinwen Hou, and Guoliang Fan. "**Curiosity-Driven and Victim-Aware Adversarial Policies**." 2022 39th Annual Computer Security Applications Conference (ACSAC). (15 pages, Technical Paper, Honorable Mention Award.) [PDF][Code]

[2] Jieke Shi, Zhou Yang, Bowen Xu, Hong Jin Kang, and David Lo. "**Compressing Pre-trained Models of Code into 3 MB**." 2022 IEEE/ACM 37th International Conference on Automated Software Engineering (ASE). (12 pages, Research Paper, Nominated for ACM SIGSOFT Distinguished Paper Award.) [PDF][Code]

[3] Chengran Yang, Bowen Xu, Ferdian Thung, Yucen Shi, Ting Zhang, Zhou Yang, Xin Zhou, Jieke Shi, Junda He, DongGyun Han, and David Lo. "**CAnswer Summarization for Technical Queries: Benchmark and New Approach**." 2022 IEEE/ACM 37th International Conference on Automated Software Engineering (ASE). (12 pages, Research Paper.) [PDF][Code]

[4] Jieke Shi, Zhou Yang, Junda He, Bowen Xu and David Lo. "**Can Identifier Splitting Improve Open-Vocabulary Language Model of Code?**" 2022 IEEE 29th International Conference on Software Analysis, Evolution and Reengineering (SANER). (5 pages, ERA Track.) [PDF][Code]

[5] Zhou Yang, Jieke Shi, Muhammad Hilmi Asyrofi and David Lo. "**Revisiting Neuron Coverage Metrics and Quality of Deep Neural Networks**." 2022 IEEE 29th International Conference on Software Analysis, Evolution and Reengineering (SANER). (12 pages, RENE Track.) [PDF][Code]

[6] Ratnadira Widyasari, Stefanus Agus Haryono, Ferdian Thung, Jieke Shi, Constance Tan, Fiona Wee, Jack Phan, and David Lo. "**On the Influence of Biases in Bug Localization: Evaluation and Benchmark**." 2022 IEEE 29th International Conference on Software Analysis, Evolution and Reengineering (SANER). (12 pages, RENE Track.) [PDF][Code][Dataset]

[7] Zhou Yang, Jieke Shi, Junda He and David Lo. "**Natural Attack for Pre-trained Models of Code**." 2022 IEEE/ACM 44th International Conference on Software Engineering (ICSE). (12 pages, Technical Track.) [PDF][Code]

[8] Zhou Yang, Harshit Jain, Jieke Shi, Muhammad Hilmi Asyrofi and David Lo. "**BiasHeal: On-the-Fly Black-Box Healing of Bias in Sentiment Analysis Systems**." 2021 IEEE 37th International Conference on Software Maintenance and Evolution (ICSME). (5 pages, NIER Track.) [PDF][DOI][Code]

[9] Muhammad Hilmi Asyrofi, Zhou Yang, Jieke Shi, Chu Wei Quan and David Lo. "**Can Differential Testing Improve Automatic Speech Recognition Systems?**" 2021 IEEE 37th International Conference on Software Maintenance and Evolution (ICSME). (5 pages, NIER Track.) [PDF][DOI][Code]

[10] Zhou Yang*, Jieke Shi*, Shaowei Wang and David Lo. "**IncBL: Incremental Bug Localization**." 2021 IEEE/ACM

36th International Conference on Automated Software Engineering (ASE). (4 pages, Tool Demonstrations, *Equal contributions.) [PDF][DOI][Code][Poster]

[11] Jieke Shi, Junwu Zhu, Jian Li, Fang Liu, and Yunbo Lv. "**An efficient double auction mechanism for job allocation**." 2019 IEEE 23rd International Conference on Computer Supported Cooperative Work in Design (CSCWD). (6 pages, Main Track.) [PDF] [DOI]

[12] Jieke Shi, Zhou Yang, and Junwu Zhu. "**An Auction-Based Task Allocation Algorithm in Heterogeneous Multi-Robot System**." 2020 EAI 2nd International Conference on Robotic Sensor Networks (ROSENET). (8 pages, Main Track.) [PDF] [DOI]

Journal:

[1] Jieke Shi, Zhou Yang, and Junwu Zhu. "**An auction-based rescue task allocation approach for heterogeneous multi-robot system**." Multimedia Tools and Applications 79, no. 21 (2020): 14529-14538. [PDF] [DOI]

[2] Yi Jiang, Jinjin Wang, Jieke Shi, Junwu Zhu, and Ling Teng. "**Network-aware virtual machine migration based on gene aggregation genetic algorithm**." Mobile Networks and Applications (2020): 1-12. [PDF] [DOI]

[3] Junwu Zhu, Jieke Shi, Zhou Yang, and Bin Li. "**A real-time decentralized algorithm for task scheduling in multi-agent system with continuous damage**." Applied Soft Computing 83 (2019): 105628. [PDF] [DOI]

[4] Junwu Zhu, Ling Teng, Huimin Lu, Jieke Shi, and Bin Li. "**Ontology negotiation: Knowledge interchange between distributed ontologies through agent negotiation**." Concurrency and Computation: Practice and Experience: e5406. [PDF] [DOI]

Funded Research Projects (PI)

Automated Negotiation and Game Mechanism of Multi-agent System in Semantic Web
National Undergraduate Innovation and Entrepreneurship Project 2018.09-2019.06
Project No.201811117029Z, Granted by Jiangsu Education Department, CNY $10000

- For complex scenarios, i.e., post-disaster rescuing, designed efficient multi-agent system task allocation mechanisms and algorithms to achieve better resource planning effects.
- Achieved good performance in some tasks of RCRSS, published 3 papers during this project.

DMA Partition Leakage Detection Platform Based on NB-IoT
Key Project of 'Challenge Cup' Academic Contest in Yangzhou University 2018.09-2019.06
Granted by Yangzhou University, CNY $10000

- Designed and produced a hardware prototype based MSP430 chips and NB-IoT protocol, and a monitoring platform for pipeline network leakage detection.
- Got the First Prize of the academic contest in Yangzhou University.

Honors & Awards

Honors and Scholarships:

- 2021.06, Outstanding Undergraduate Dissertation (Awarded to top 2‰ for all graduates in province), Department of Education of Jiangsu, China
- 2020.06, Outstanding Graduate (Awarded to top 10% for all graduates), Yangzhou University, China
- 2019.11, National Encouragement Scholarship, Ministry of Education of the People's Republic of China
- 2018.12, The Second Level President's Scholarship (Awarded to top 5 students in class), Yangzhou University, China
- 2017.12, The First Level President's Scholarship (Awarded to top 1 student in class), Yangzhou University, China

Contest Awards:

- 2019.07, Third Prize of 14^{th} National University Students' Intelligent Car Race, MOE of China and NXP Semiconductors
- 2018.05, Second Prize of 8^{th} Mathor Cup Challenge Contest in Mathematical Modeling, Chinese Society of Optimization, Overall Planning and Economic Mathematics
- 2018.04, Second Prize of 9^{th} Lanqiao Cup Programming Contest, Ministry of Industry and Information Technology of China

Professional Activities

Talks:

- Game theory and Personality Traits in Task Scheduling Problem of Swarm Robot System
  Invited talk, 9^{th} Students Workshop between Yangzhou University and Kyushu Institute of Technology, Yangzhou, China, 2020.01
- An Efficient Double Auction Mechanism for Job Allocation
  Oral presentation, IEEE CSCWD, Porto, Portugal, 2019.05
- An Auction-Based Task Allocation Algorithm in Heterogeneous Multi-Robot System
  Oral presentation, EAI ROSENET, Kokura, Japan, 2018.08

Reviewer Service:

- 2021-Present, Robotics and Autonomous Systems Journal
- 2021-Present, Neurocomputing (Software Section) Journal
- Sub-reviewer of ICSE 2022, ICECCS 2022, CAIN 2022, SE4RAI 2022, IJCAI 2022, ASE 2022, SANER 2023 conference.

Teaching:

- 2019.03-2019.06, Student Mentor of Micro Innovation Contest, Yangzhou University, China

Membership:

- 2019-Present, Student Member of China Computer Federation (CCF)
- 2019-Present, Student Member of Association for Computing Machinery (ACM)