Jieke Shi

🛈 Ph.D. Student (Second Year) & Research Engineer

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📑 Research Interests and Past Works

♣ Language Model of Code:
Studying and improving the _efficiency and robustness properties_ of language models trained on source code.

♠ AI Software Testing:
Revealing _robustness and fairness issues_ in AI systems through comprehensive testing or adversarial attacks.

■ Software Text Analytics:
Mining insights & automating software-related tasks through analyzing textual data in software engineering.

[C]: Full Research Paper in Conference   [S]: Short Paper   [T]: Tool Demo Paper

Highlights of Publications (Awarded, Nominated, Highly Cited)

[C7] ♣ **Jieke Shi**, Zhou Yang, Bowen Xu, Hong Jin Kang, and David Lo. "Compressing Pre-trained Models of Code into 3 MB." _The 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022, CORE Ranking A⁺)._ [PDF][DOI][Code]
🏆 _Nominated for ACM SIGSOFT Distinguished Paper Award_

[C6] ♠ 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." _The 39th Annual Computer Security Applications Conference (ACSAC 2022, CORE Ranking A)._ [PDF][DOI][Code]
🏆 _Won Honorable Mention Award_

[C5] ♠ Zhou Yang, **Jieke Shi**, Muhammad Hilmi Asyrofi, and David Lo. "Revisiting Neuron Coverage Metrics and Quality of Deep Neural Networks." _The 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022, CORE Ranking A)._ [PDF][DOI][Code]
🔥 _Most-cited paper (17 citations) in RENE Track at the time of writing_

Other Publications

[C4] ■ Zhou Yang, Chenyu Wang, **Jieke Shi**, Thong Hoang, Pavneet Kochhar, Qinghua Lu, Zhenchang Xing, and David Lo. "What Do Users Ask in Open-Source AI Repositories? An Empirical Study of GitHub Issues." _The 20th IEEE International Conference on Mining Software Repositories (MSR 2023, CORE Ranking A)._ [PDF][Code]

[C3] ■ Chengran Yang, Bowen Xu, Ferdian Thung, Yucen Shi, Ting Zhang, Zhou Yang, Xin Zhou, **Jieke Shi**, Junda He, DongGyun Han, and David Lo. "Answer Summarization for Technical Queries: Benchmark and New Approach." _The 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022, CORE Ranking A⁺)._ [PDF][DOI][Code]

[S3] ♣ **Jieke Shi**, Zhou Yang, Junda He, Bowen Xu, and David Lo. "Can Identifier Splitting Improve Open-Vocabulary Language Model of Code?" _The 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022, CORE Ranking A)._ [PDF][Poster][DOI][Code]

[C2] ■ 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." _The 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022, CORE Ranking A)._ [PDF][DOI]

[C1] ♣ Zhou Yang, **Jieke Shi**, Junda He, and David Lo. "Natural Attack for Pre-trained Models of Code." _The 44th IEEE/ACM International Conference on Software Engineering (ICSE 2022, CORE Ranking A⁺)._ [PDF][DOI][Code]

[S2] ♠ 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." _The 37th IEEE International Conference on Software Maintenance and Evolution (ICSME 2021, CORE Ranking A)._ [PDF][DOI][Code]

[S1] ♠ Muhammad Hilmi Asyrofi, Zhou Yang, **Jieke Shi**, Chu Wei Quan, and David Lo. "Can Differential Testing Improve Automatic Speech Recognition Systems?" *The 37th IEEE International Conference on Software Maintenance and Evolution (ICSME 2021, CORE Ranking A)*. [PDF][DOI][Code]

[T1] ■ Zhou Yang*, **Jieke Shi***, Shaowei Wang, and David Lo. "IncBL: Incremental Bug Localization." *The 36th IEEE/ACM International Conference on Automated Software Engineering (*Equal contributions, ASE 2021, CORE Ranking A*)*. [PDF][Poster][DOI][Code]

🎓 Education & Work Experience

Singapore Management University • School of Computing and Information Systems — Singapore
Ph.D. Student, Supervised by Prof. David Lo — 2022.08-Present

Singapore Management University • School of Computing and Information Systems — Singapore
Research Engineer, Supervised by Prof. David Lo — 2021.06-Present

Chinese Academy of Sciences • Institute of Computing Technology — Beijing, China
Research Assistant Intern, Supervised by Dr. Shi Wang — 2020.07-2021.04

Yangzhou University • School of Information Engineering — Yangzhou, China
B.Eng., Electronic and Information Engineering, Supervised by Prof. Junwu Zhu — 2016.09-2020.06

🏆 Honors & Awards

Paper Awards

❯ *Honorable Mention Award* (official, top 4 papers out of 303 submissions) for our ACSAC 2022 paper entitled "Curiosity-Driven and Victim-Aware Adversarial Policies"
❯ *ACM SIGSOFT Distinguished Paper Nominee* (unofficial, top 15 papers out of 527 submissions) for our ASE 2022 paper entitled "Compressing Pre-trained Models of Code into 3 MB"

Scholarships/Fellowships

❯ *SCIS Dean's List Award*, from Singapore Management University, 2023
❯ *SMU Presidential Doctoral Fellowships*, from Singapore Management University, 2023
❯ *National Encouragement Scholarship*, from Ministry of Education of the People's Republic of China, 2019
❯ *The Second Level Presidential Scholarship*, from Yangzhou University, 2018
❯ *The First Level Presidential Scholarship*, from Yangzhou University, 2017

💼 Professional Services

Invited Reviewer

❯ Neurocomputing (Software Section) Journal, 2021 & 2022
❯ Robotics and Autonomous Systems Journal, 2021
❯ Sub-reviewer of ICSE 2022, ICECCS 2022, CAIN 2022, SE4RAI 2022, IJCAI 2022, ASE 2022, SANER 2023, FSE 2023, ASE 2023, ICSE 2024 conferences