JIAN ZHANG

Nanyang Technological University   Jan 2024
50 Nanyang Avenue, Singapore 639798   Email: jian_zhang@ntu.edu.sg

RESEARCH INTERESTS	My research interests focus on improving software maintenance via deep learning, especially I enjoy extending NLP techniques with the characteristics of source code for software quality/security analysis and remediation.

EDUCATION & WORK

Research Fellow — 2022/08-Present
Nanyang Technological University, Singapore
Supervisor: Yang Liu

PhD Degree — 2016/09-2022/06
Beihang University, Computer Science and Technology
Thesis: Intelligent Source Code Maintenance based on Neural Networks
Supervisor: Xudong Liu

Bachelor's Degree — 2012/09-2016/06
Beihang University, Computer Science and Technology

PUBLICATIONS

(* for corresponding author)

ICLR'24
Yanzhou Li, Kangjie Chen, Tianlin Li, **Jian Zhang**, Shangqing Liu, Wenhan Wang, Tianwei Zhang, Yang Liu. "BadEdit: Backdooring Large Language Models by Model Editing". *Twelfth International Conference on Learning Representations, ICLR 2024. (Accepted)*

ICSE'24 (CCF-A)
Wenhan Wang, Yanzhou Li, Anran Li, **Jian Zhang**, Wei Ma, Yang Liu. "An Empirical Study on Noisy Label Learning for Program Understanding". *46th International Conference on Software Engineering, ICSE 2024. (Accepted)*

ICSE'24 (CCF-A)
Li Tianlin, Yue Cao, **Jian Zhang***, Shiqian Zhao, Yihao Huang, Aishan Liu, Qing Guo, Yang Liu. RUNNER: Responsible UNfair NEuron Repair for Enhancing Deep Neural Network Fairness. *46th International Conference on Software Engineering, ICSE 2024.*

ASE'23 (CCF-A)
Kai Huang, Xiangxin Meng, **Jian Zhang***, Yang Liu, Wenjie Wang, Shuhao Li, Yuqing Zhang*. An Empirical Study on Fine-tuning Large Language Models of Code for Automated Program Repair. *38th IEEE/ACM International Conference on Automated Software Engineering, ASE 2023.* **ACM Distinguished Paper Award**

ASE'23 (CCF-A)
Jian Zhang, Shangqing Liu, Xu Wang, Li Tianlin, Yang Liu. Learning to Locate and Describe Vulnerabilities. *38th IEEE/ACM International Conference on Automated Software Engineering, ASE 2023. (Acceptance rate: 134/630=21.3%)*

ISSTA'23 (CCF-A)
Jian Zhang, Xu Wang, Hongyu Zhang, Hailong Sun, Xudong Liu, Chunming Hu, Yang Liu. "Detecting Condition-related Bugs with Control Flow Graph Neural Network". *32nd ACM SIGSOFT International Symposium on Software Testing and Analysis, ISSTA 2023. (Acceptance*

	rate: 117/406=28.8%)
BIGDATA'21	**Jian Zhang**, Xiangxin Meng, Hailong Sun, Xu Wang, Xudong Liu. "Data-driven intelligent collaboration of software developers". *Big Data Research, 2021, 7(1)* (In Chinese)
ASE'20 *(CCF-A)*	**Jian Zhang,** Xu Wang, Hongyu Zhang, Hailong Sun, Yanjun Pu, Xudong Liu. "Learning to Handle Exceptions". *35th IEEE/ACM International Conference on Automated Software Engineering, ASE 2020.* (*Acceptance rate: 93/414=22.5%*)
ICSE'20 *(CCF-A)*	**Jian Zhang,** Xu Wang, Hongyu Zhang, Hailong Sun, Xudong Liu. "Retrieval-based neural source code summarization". *42nd International Conference on Software Engineering, ICSE 2020.* (*Acceptance rate: 129/617=20.5%,* **Citations: 173**)
ICSE'19 *(CCF-A)*	**Jian Zhang,** Xu Wang, Hongyu Zhang, Hailong Sun, Kaixuan Wang, Xudong Liu. "A novel neural source code representation based on abstract syntax tree". *41st International Conference on Software Engineering, ICSE 2019.* (*Acceptance rate: 109/529=21%,* **Citations: 564**)
IJCNN'19	Mengjiao Bao, Jianxin Li, **Jian Zhang**, Hao Peng, Xudong Liu. "Learning Semantic Coherence for Machine Generated Spam Text Detection". *International Joint Conference on Neural Networks, IJCNN 2019.*
ICSE'18 *(CCF-A)*	**Jian Zhang**, Hailong Sun, Yanfei Tian, Xudong Liu. "Semantically enhanced tag recommendation for software CQAs via deep learning". *40th International Conference on Software Engineering, ICSE 2018* (Poster Track)

PROJECTS

2016/07-2019/06	Intelligent Collaboration of Developers based on Correlation Analysis
	■ Supported by National Key Research and Development Program of China.
	■ Contributions:1) Serve as a Tech Lead of one team about 15 developers; 2) Design the architecture of the whole system (about 50000+ lines of code); 3) Build the knowledge graph of developers with more than 43 million nodes.
2020/01-2022/06	Data-driven Intelligent Source Code Development and Maintenance
	■ Supported by National Natural Science Foundation of China
	■ Contributions: 1) Work on the problems of source code representation and comment generation; 2) Write technical reports and papers.
2023/04-Present	PentestGPT: An LLM-empowered Automatic Penetration Testing Tool
	■ GitHub open-source project. **Stars: 5.6k**
	■ Contributions: 1) Participate in the discussion of tool design and optimization; 2) Develop and test the parsing module.

HONORS AND AWARDS

• **Distinguished Paper Award**, ACM SIGSOFT	2023
• Outstanding Doctoral Dissertation, Beihang University	2023
• Outstanding Graduate Student, Beihang University	2022

- Outstanding Research Paper Award, Beihang University   2020
- **National Scholarship for PhD**, Ministry of Education of P.R.China 2019
- Merit Student Award, Beihang University   2019
- Merit Student Award, Beihang University   2018
- Merit Student Award, Beihang University   2017
- Grand Prize of Big Data and Computing Intelligence Competition, China Computer Federation   2017
- **1st Prize (1/415)** of Big Data and Computing Intelligence Competition Problem 3, China Computer Federation   2017
- 2nd Prize (3/589) of Big Data and Computing Intelligence Competition Problem 4, China Computer Federation   2017
- Outstanding Undergraduate Award, Beihang University   2016
- National Encouragement Scholarship, Ministry of Education of P.R.China   2015

SERVICES   **PC/Reviewer:**
- The First International Workshop on Large Language Models for Code (LLM4Code 2024)
- 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024)
- The 2024 ACM Web Conference (WWW 2024)
- 21st International Conference on Mining Software Repositories (MSR 2024)
- 28th International Conference on Engineering of Complex Computer Systems (ICECCS 2024)
- 28th IEEE Pacific Rim International Symposium on Dependable Computing (PRDC 2023)
- Journal of Systems and Software (JSS), 2020