彭超

北京市海淀区大钟寺广场字节跳动

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教育经历

爱丁堡大学 **英国爱丁堡**
博士研究生：信息学 - 计算机基础科学 - 软件工程方向 2017年9月2021年11月
- 爱丁堡大学信息学院博士全额奖学金 导师：Dr. Ajitha Rajan
- 科研领域:
  - GPU程序的覆盖度量方法和自动测试用例生成,
  - 区块链智能合约程序分析,
  - 安卓图形界面测试。

爱丁堡大学 **英国爱丁堡**
硕士研究生：高性能计算与数据科学 2016年9月至2017年8月
- 毕业论文: FEniCS Performance Investigation and Porting miniDFT to GPU Clusters（FEniCS的性能探究以及使用GPU集群加速miniDFT）
- 国际计算集群竞赛决赛成就奖

徐州工程学院 **中国徐州**
工学学士：计算机科学与技术 2012年9月至2016年6月
- 国家奖学金2次，国家励志奖学金1次
- 院系学生会主席

工作经历

字节跳动 2021年7月5日至今
Software Engineering Lab 中国北京
· 职位：首席研究科学家

复旦大学 2022年3月2日至今
计算机科学技术学院 中国上海
· 职位：专业硕士行业导师

实习经历

华为爱丁堡研发中心 2020年11月23日至2021年6月22日
*2012*实验室编程语言实验室 英国爱丁堡
· 主管: Dan Ghica, 编程语言实验室负责人
· 职责: 编译器实现与优化。编译器后端性能测试。

华为伦敦研发中心 2019年10月28日至2020年2月28日
*2012*实验室海思麒麟*GPU* 英国伦敦
· 主管：Graham Connor，首席GPU科学家
· 职责：GPU微性能基准测试框架的架构设计，框架的编译系统设计与实现，具体测试用例的设计与实现

论文发表

预印 / 审稿中

8. Zexiong Ma, **Chao Peng**, Qunhong Zeng, Pengfei Gao, Yanzhen Zou, Bing Xie (2025). *Tool-integrated Reinforcement Learning for Repo Deep Search.* arXiv:2508.03012

7. Xinghang Li, Jingzhe Ding, **Chao Peng**, Bing Zhao, Xiang Gao, Hongwan Gao, Xinchen Gu (2025). *SafeGenBench: A Benchmark Framework for Security Vulnerability Detection in LLM-Generated Code.* arXiv:2506.05692

6. Hu, Ruida, **Chao Peng**, Xinchen Wang, and Cuiyun Gao (2025). *An LLM-based Agent for Reliable Docker*

Environment Configuration. arXiv:2502.13681

5. Chen, Jialiang, Kaifa Zhao, Jie Liu, **Chao Peng**, Jierui Liu, Hang Zhu, Pengfei Gao, Ping Yang, Shuiguang Deng (2024). *CoReQA: Uncovering Potentials of Language Models in Code Repository Question Answering.* arXiv:2501.03447

4. Guan, Zhanming, Junlin Liu, Jierui Liu, **Chao Peng**, Dexin Liu, Ningyuan Sun, Bo Jiang, Wenchao Li, Jie Liu, and Hang Zhu (2024). *ContextModule: Improving Code Completion via Repository-level Contextual Information.* arXiv:2412.08063

3. Tsimpourlas, Foivos, **Chao Peng**, Carlos Rosuero, Ping Yang, and Ajitha Rajan (2024) *Go-Oracle: Automated Test Oracle for Go Concurrency Bugs.* arXiv:2412.08061

2. Meng, Xiangxin, Zexiong Ma, Pengfei Gao, **Chao Peng** (2024). *An Empirical Study on LLM-based Agents for Automated Bug Fixing.* arXiv:2411.10213

1. Liu, Yizhou, Pengfei Gao, Xinchen Wang, Jie Liu, Yexuan Shi, Zhao Zhang, **Chao Peng** (2024). *MarsCode Agent: AI-native Automated Bug Fixing.* arXiv:2409.00899

同行评议论文

25. Wang, Xinchen and Gao, Pengfei and **Peng, Chao** and Hu, Ruida and Gao, Cuiyun (2025). *CodeVisionary: An Agent-based Framework for Evaluating Large Language Models in Code Generation.* In ASE 2025. November 2025.

24. Wu, Qinyun, **Chao Peng**, Pengfei Gao, Ruida Hu, Haoyu Gan, Bo Jiang, Jinhe Tang, Zhiwen Deng, Zhanming Guan, Cuiyun Gao, Xia Liu, Ping Yang (2025). *RepoMasterEval: Evaluating Code Completion via Real-World Repositories.* In ASE 2025 Industry Track. November 2025.

23. Tsimpourlas, Foivos, **Chao Peng**, Carlos Rosuero, Ping Yang, Ajitha Rajan (2025). *Go-Oracle: Automated Test Oracle for Go Concurrency Bugs.* In ESEM 2025. October 2025.

22. Ma, Zexiong, **Chao Peng**, Pengfei Gao, Xiangxin Meng, Yanzhen Zou, and Bing Xie (2025). *SoRFT: Issue Resolving with Subtask-oriented Reinforced Fine-Tuning.* In ACL 2025. July 2025.

21. Ruida Hu, **Chao Peng**, Jingyi Ren, Bo Jiang, Xiangxin Meng, Qinyun Wu, Pengfei Gao, Xinchen Wang and Cuiyun Gao (2025). *Understanding Large Language Model Performance in Software Engineering: A Large-scale Question Answering Benchmark.* In SIGIR 2025 Short Paper Track. July 2025

20. Xinchen Wang, Pengfei Gao, Xiangxin Meng, **Chao Peng**, Ruida Hu, Yun Lin, Cuiyun Gao (2025). *AEGIS: An Agent-based Framework for Bug Reproduction from Issue Descriptions.* In FSE 2025 Industry Track. June 2025

19. Li, Bowen, Wenhan Wu, Ziwei Tang, Lin Shi, John Yang, Jinyang Li, Shunyu Yao, Chen Qian, Binyuan Hui, Qicheng Zhang, Zhiyin Yu, He Du, Ping Yang, Dahua Lin, **Chao Peng**, Kai Chen (2025). *Prompting Large Language Models to Tackle the Full Software Development Lifecycle: A Case Study.* In proceedings of the 31st International Conference on Computational Linguistics (COLING 2025). January 2025

18. Liang, Xiaoyun, Jingyi Ren, Jiayi Qi, **Chao Peng**, and Bo Jiang. *DialogAgent: An Auto-engagement Agent for Code Question Answering Data Production.* In ICSE 2025 SEIP Track April 2024

17. Chao Peng, Qinyun Wu, Jiangchao Liu, Jierui Liu, Bo Jiang, Mengqian Xu, Yinghao Wang, Xia Liu, Ping Yang (2024). *RepoSim: Evaluating Prompt Strategies for Code Completion via User Behavior Simulation.* In proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024), New Idea and Emerging Results Track October 2024

16. Zhu Tao, Yongqiang Gao, Jiayi Qi, **Chao Peng**, Qinyun Wu, Xiang Chen, Ping Yang (2024). *Neat: Mobile App Layout Similarity Comparison based on Graph Convolutional Networks.* In proceedings of the ACM International Conference on the Foundations of Software Engineering (FSE 2024), Industry Track July 2024

15. Chao Peng, Zhengwei Lv, Jiarong Fu, Jiayuan Liang, Zhao Zhang, Ajitha Rajan, Ping YangPing Yang (2024). *Hawkeye: Change-targeted Testing for Android Apps based on Deep Reinforcement Learning.* In proceedings of the 46th IEEE/ACM International Conference on Software Engineering, Software Engineering in Practice Track (ICSE SEIP 2024) April 2024

14. Xiaoyun Liang, Jiayi Qi, Yongqiang Gao, **Chao Peng**, Ping Yang (2023). *AG3: Automated Game GUI Text Glitch Detection based on Computer Vision.* In proceedings of the 2023 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023) December 2023

13. Zongze Jiang, Ming Wen, Yixin Yang, **Chao Peng**, Ping Yang, Hai Jin, (2023). *Effective Concurrency Testing for Go via Directional Primitive-constrained Interleaving Exploration.* In proceedings of the 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023) September 2023

12. Siwei Wang, Xue Mao, Ziguang Gao, Yujun Gao, Qucheng Shen, **Chao Peng** (2023). *NxtUnit: Automated Unit Test Generation for Go.* In proceedings of the 27th International Conference on Evaluation and Assessment in Software Engineering (EASE 2023). June 2023

11. Jingling Sun, Ting Su, Kai Liu, **Chao Peng**, Zhao Zhang, Geguang Pu, Tao Xie, and Zhendong Su (2022). *Characterizing and Finding SystemSetting-Related Defects in Android Apps.* IEEE Transactions on Software Engineering (TSE). 2023

10. Zhengwei Lv, **Chao Peng**, Zhao Zhang, Ting Su, Kai Liu, Ping Yang. *Fastbot2: Reusable Automated Model-based GUI Testing for Android Enhanced by Reinforcement Learning.* In proceedings of the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022) Industry Showcase Track. October 2022

9. Chao Peng, Zhao Zhang, Zhengwei Lv and Ping Yang. *MUBot: Learning to Test Large-Scale Commercial Android Apps like a Human.* In proceedings of the 38th International Conference on Software Maintenance and Evolution (ICSME 2022) Industry Track October 2022

8. Chao Peng, Yujun Gao and Ping Yang. *Automated Server Testing: an Industrial Experience Report.* In proceedings of the 38th International Conference on Software Maintenance and Evolution (ICSME 2022) Industry Track October 2022

7. Sefa Akca, **Chao Peng**, Ajitha Rajan. *Testing Smart Contracts: Which Technique Performs Best?* In proceedings of the 15th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM 2021) October 2021

6. Chao Peng, Ajitha Rajan, Tianqin Cai. *CAT: Change-focused Android GUI Testing.* In proceedings of the 37th International Conference on Software Maintenance and Evolution (ICSME 2021) September 2021

5. Chao Peng, Ajitha Rajan. *Automated Test Generation for OpenCL Kernels using Fuzzing and Constraint Solving.* In proceedings of the 11th Workshop on General Purpose GPUs 2020 (GPGPU @ PPoPP) Feburary 2020

4. Chao Peng, Sefa Akca, Ajitha Rajan. *SIF: A Framework for Solidity Contract Instrumentation and Analysis.* In proceedings of the the 26th Asia-Pacific Software Engineering Conference (APSEC 2019). December 2019

3. Sefa Akca, Ajitha Rajan, **Chao Peng**. *SolAnalyser: A Framework for Analysing and Testing Smart Contracts.* In proceedings of the the 26th Asia-Pacific Software Engineering Conference (APSEC 2019). December 2019

2. Chao Peng. *On the Correctness of GPU Programs.* In proceedings of the 2019 ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2019). July 2019

1. Chao Peng, Ajitha Rajan. *CLTestCheck: Measuring Test Effectiveness for GPU Kernels.* In proceedings of the 22nd International Conference on Fundamental Approaches to Software Engineering (FASE 2019). April 2019

科研会议

组织/指导委员会	AI-IDE@FSE'25, APR@ICSE'25, AIWare
程序委员会 （Research/Technical Track）	LLM4Code'26, FSE'26, ASE'25, LLM4Code'25, FSE'25, MSR'23(Junior PC), A-Mobile'22, PRDC'22
程序委员会 （Industry Track）	SANER'26, ASE'25, ISSRE'24, APSEC'24, MSR'24
程序委员会 （Artifact Evaluation）	OSDI'22, USENIX ATC'22, ISSTA'22, 21, 20
学生志愿者	PLDI'20, ISSTA'19, ETAPS'19
论文审稿人	ICSE'19 SEIP (Software Engineering in Practice) Track

相关技能

外语	英语 - 流利
	德语 - 基础
技术	编程语言: C/C++, Java, Fortran, Python, Kotlin, Rust, Go
	并行计算: OpenMP, MPI, OpenCL, CUDA, SYCL
	程序分析: JavaSoot, Clang LibTooling
	图形编程: OpenGL (ES), Vulkan
工具	LaTeX, Git, SVN, CMake, Gradle

教学经历

硕士毕业设计 2018年4月至2018年8月，2019年4月至2019年8月
硕士生导师助理 爱丁堡大学信息学院

负责辅助指导以下硕士研究生的毕业设计

- Bowen Du: Code coverage measurement for GPU Programs
- Yangning Li: Random test case generation for OpenCL programs

软件测试 2018年1月至2018年4月，2019年1月至2019年4月，2021年1月至2021年4月
助教，辅导，作业与考试阅卷 爱丁堡大学信息学院

计算机编程概念与技能 2017年11月至2017年12月，2018年12月至2019年1月
作业与考试阅卷 爱丁堡大学信息学院

Java程序设计 2017年9月至2017年12月，2018年9月至2018年12月
实验课辅导 爱丁堡大学信息学院

在本课程的教学过程中被提名为爱丁堡大学优秀教师奖

奖学金与荣誉称号

奖学金

- 爱丁堡大学信息学院**博士全额奖学金** 2017年4月
- 2014/15学年**国家奖学金** 2015年11月
- 2013/14学年**国家励志奖学金** 2014年11月
- 2012/13学年**国家奖学金** 2013年11月