Yun Peng

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EDUCATION

The Chinese University of Hong Kong (CUHK), Hong Kong, China　Jul 2020 - Jul 2024
Computer Science & Engineering Department
Ph.D. in Computer Science and Engineering

University of Science and Technology of China (USTC), Anhui, China　Sep 2016 - Jun 2020
Elite Class for Computer Science (30/1850)
Special Class for the Gifted Young
B.E. in Computer Science

PROFESSIONAL EXPERIENCE

Huawei Tech. Investment Co. Limited, Hong Kong, China　Aug 2024 - Present
Principal Engineer
Software Engineering Lab (Hong Kong)
Asia Pacific Research Institute, 2012 Laboratories

The Chinese University of Hong Kong, Hong Kong, China　Aug 2024 - Present
Honorary Research Associate
Computer Science & Engineering Department

Huawei Tech. Investment Co. Limited, Hong Kong, China　May 2024 - Jul 2024
Research Internship
Hong Kong Interdisciplinary Technology Innovation Center
Asia Pacific Research Institute, 2012 Laboratories

Salesforce.com Singapore Pte Ltd, Singapore　Feb 2024 - May 2024
PhD Internship, AI Researcher
Salesforce Research Asia

RESEARCH INTERESTS

Intelligent Software engineering (AI4SE), specifically,

- **Intelligent Code Analysis**: Type Inference [ICSE'22, ASE'23], Code Review
- **Intelligent Software Development**: Code Generation [FSE'25, Forge'25], Automatic Program Repair [ICSE'24], API Recommendation [TSE'22]
- **Code LLM Evaluation**: Code Generation Benchmark [FSE'25]
- **Software Ecosystem**: Language Feature Analysis [SANER'21], Run-time Environment Analysis [ICSE'24]

PUBLICATIONS

Conference Papers:

1. "COFFE: A Code Efficiency Benchmark for Code Generation"　[FSE'25]
   Yun Peng, Jun Wan, Yichen Li, Xiaoxue Ren
   The ACM International Conference on the Foundations of Software Engineering, Trondheim, Norway, Jun 23 - 27, 2025
   🏆**ACM SIGSOFT Distinguished Paper Award**

2. "PerfCodeGen: Improving Performance of LLM Generated Code with Execution Feedback"　[Forge'25]
   Yun Peng, Akhilesh Deepak Gotmare, Michael R. Lyu, Caiming Xiong, Silvio Savarese, Doyen Sahoo

The 2nd ACM international conference on AI Foundation Models and Software Engineering, Ottawa, Ontario, Canada, Apr 27 - 28, 2025
🏆**ACM SIGSOFT Distinguished Paper Award**

3. "Less is More? An Empirical Study on Configuration Issues in Python PyPI Ecosystem" [ICSE'24]
Yun Peng, Ruida Hu, Ruoke Wang, Cuiyun Gao, Shuqing Li, Michael R. Lyu
46th International Conference on Software Engineering, Lisbon, Portugal, Apr 14-20, 2024

4. "Domain Knowledge Matters: Improving Prompts with Fix Templates for Repairing Python Type Errors" [ICSE'24]
Yun Peng, Shuzheng Gao, Cuiyun Gao, Yintong Huo, Michael R. Lyu
46th International Conference on Software Engineering, Lisbon, Portugal, Apr 14-20, 2024

5. "Less Cybersickness, Please: Demystifying and Detecting Stereoscopic Visual Inconsistencies in Virtual Reality Apps" [FSE'24]
Shuqing Li, Cuiyun Gao, Jianping Zhang, Yujia Zhang, Yepang Liu, Jiazhen Gu, **Yun Peng**, Michael R. Lyu
The ACM International Conference on the Foundations of Software Engineering, Porto de Galinhas, Brazil, Brazil, Jul 15-19, 2024

6. "Enhancing LLM-Based Coding Tools through Native Integration of IDE-Derived Static Context" [LLM4Code'24]
Yichen Li, **Yun Peng**, Yintong Huo, Michael R. Lyu
The First International Workshop on Large Language Models for Code, Lisbon, Portugal, Apr 20, 2024

7. "vFix: Facilitating Software Maintenance of Smart Contracts via Automatically Fixing Vulnerabilities" [ICSME'24]
Pengcheng Fang, Peng Gao, **Yun Peng**, QingZhao Zhang, Tao Xie, Dawn Song, Prateek Mittal, Sanjeev Kulkarni, Zhuotao Liu, Xusheng Xiao
40th International Conference on Software Maintenance and Evolution, Flatstaff, AZ, USA, Oct 6 - 11, 2024

8. "Generative Type Inference for Python" [ASE'23]
Yun Peng, Chaozheng Wang, Wenxuan Wang, Cuiyun Gao, Michael R. Lyu
38th IEEE/ACM International Conference on Automated Software Engineering, Kirchberg, Luxembourg, Sep 11-15, 2023
🏆**ACM SIGSOFT Distinguished Paper Award**

9. "REEF: A Framework for Collecting Real-World Vulnerabilities and Fixes" [ASE'23]
Chaozheng Wang, Zongjie Li, **Yun Peng**, Shuzheng Gao, Sirong Chen, Shuai Wang, Cuiyun Gao, Michael R. Lyu
38th IEEE/ACM International Conference on Automated Software Engineering, Kirchberg, Luxembourg, Sep 11-15, 2023 (Industry Challenge)
🏆**Distinguished Paper Award of Industry Challenge Track**

10. "No More Fine-tuning? An Experimental Evaluation of Prompt Tuning in Code Intelligence" [ESEC/FSE'22]
Chaozheng Wang, Yuanhang Yang, Cuiyun Gao, **Yun Peng**, Hongyu Zhang, Michael Lyu
30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Singapore, Nov 14-18, 2022
🥈 **The second most cited paper in the conference**

11. "Static Inference Meets Deep Learning: A Hybrid Type Inference Approach for Python" [ICSE'22]
Yun Peng, Cuiyun Gao, Zongjie Li, Bowei Gao, David Lo, Qirun Zhang, Michael Lyu
44th International Conference on Software Engineering, Pittsburgh, PA, USA, May 21-29, 2022
🥇 **Nominated for ACM SIGSOFT Distinguished Paper Award**

12. "Source code summarization with structural relative position guided Transformer" [SANER'22]
Zi Gong, Cuiyun Gao, Yasheng Wang, Wenchao Gu, **Yun Peng**, Zenglin Xu
29th IEEE International Conference on Software Analysis, Evolution and Reengineering, March 15-18, 2022

13. "An Empirical Study for Common Language Features Used in Python Projects" [SANER'21]
Yun Peng, Yu Zhang, Mingzhe Hu
28th IEEE International Conference on Software Analysis, Evolution and Reengineering, Honolulu, HI, USA, March 9-12, 2021

Journal Papers:

1. "A Closer Look into Transformer-Based Code Intelligence Through Code Transformation: Challenges and Opportunities" [TSE'24]
   Yaoxian Li, Shiyi Qi, Cuiyun Gao, **Yun Peng**, David Lo, Zenglin Xu, Michael R. Lyu
   IEEE Transactions on Software Engineering

2. "Prompt Tuning in Code Intelligence: An Experimental Evaluation" [TSE'23]
   Chaozheng Wang, Yuanhang Yang, Cuiyun Gao, **Yun Peng**, Hongyu Zhang, Michael R. Lyu
   IEEE Transactions on Software Engineering

3. "API Usage Recommendation via Multi-View Heterogeneous Graph Representation Learning" [TSE'23]
   Yujia Chen, Cuiyun Gao, Xiaoxue Ren, **Yun Peng**, Xin Xia, Michael Lyu
   IEEE Transactions on Software Engineering (Journal First)

4. "Revisiting, Benchmarking and Exploring API Recommendation: How Far Are We?" [TSE'22]
   Yun Peng, Shuqing Li, Wenwei Gu, Yichen Li, Wenxuan Wang, Cuiyun Gao, Michael Lyu
   IEEE Transactions on Software Engineering (Journal First)

AWARDS

Paper Awards:
- ACM SIGSOFT Distinguished Paper Award (FSE'25) Jun 2025
- ACM SIGSOFT Distinguished Paper Award (Forge'25) Apr 2025
- ACM SIGSOFT Distinguished Paper Award (ASE'23) Sep 2023
- Distinguished Paper Award of Industry Challenge Track (ASE'23) Sep 2023
- ACM SIGSOFT Distinguished Paper Award Nomination (ICSE'22) May 2022

Personal Awards:
- Outstanding Doctoral Student (ChinaSoft'23) Dec 2023
- Outstanding Undergraduate Thesis (Top 5%) Jun 2020
- First Prize of Honor Class Scholarship (15/226) Sep 2018, 2019
- Gold Outstanding Student Scholarship (2/40) Sep 2018

INVITED TALKS

- Intelligent Code Analysis and Program Repair in the Era of LLMs *@ NUS, USTC, CSU, MSRA, MLNLP*
- Intelligent Code Analysis *@ Outstanding Doctoral Student Forum of ChinaSoft 2023*

SERVICE

- Program Committee Member for ASE 2025
- Program Committee Member for Forge 2024, 2025
- Reviewer for ACM Computing Surveys (ACM CSUR)
- Reviewer for IEEE Transactions on Software Engineering (IEEE TSE)
- Reviewer for ACM Transactions on Software Engineering and Methodology (ACM TOSEM)
- Reviewer for IEEE Transactions on Reliability (IEEE TR)
- Reviewer for Elsevier Neural Networks (Elsevier NN)
- Student Volunteer for ICSE 2021, 2022

TEACHING EXPERIENCE

CSCI3100 Software Engineering Jan 2021 - May 2023
Teaching Assistant

CSCI2040 Introduction to Python Sep 2021 - Dec 2021
Teaching Assistant