

# Chenyang Yang

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## EDUCATION

**Carnegie Mellon University**, Pittsburgh, Pennsylvania, USA

Ph.D. in Software Engineering, School of Computer Science

Aug 2021 – Present

- Adviser: Prof. Christian Kästner, Prof. Sherry Tongshuang Wu
- Focus: Human-centered AI, AI engineering, AI model testing and evaluation.

**Peking University**, Beijing, China

B.S. (Summa Cum Laude) in Computer Science, Turing Class

Sep 2017 – Jul 2021

- Adviser: Prof. Yingfei Xiong
- Cumulative GPA: 3.83 / 4.00, Ranking: 5 / 230

## PUBLICATIONS

- [1] **What Should We Engineer in Prompts? Training Humans in Requirement-Driven LLM Use**  
Qianou Ma, Weirui Peng, Chenyang Yang, Hua Shen, Kenneth Koedinger, Tongshuang Wu.  
*ACM Transactions on Computer-Human Interaction (TOCHI)*, 2025.
- [2] **Orbit: A Framework for Designing and Evaluating Multi-objective Rankers**  
Chenyang Yang, Tesi Xiao, Michael Shavlovsky, Christian Kästner, Tongshuang Wu.  
*International Conference on Intelligent User Interfaces (IUI)*, 2025.
- [3] **LLMs as Workers in Human-Computational Algorithms? Replicating Crowdsourcing Pipelines with LLMs**  
Tongshuang Wu, Haiyi Zhu, ..., Chenyang Yang.  
*Conference on Human Factors in Computing Systems (CHI Case Study)*, 2025.
- [4] **Differential Performance Fuzzing of Configuration Options**  
Haesue Baik, Chenyang Yang, Vasudev Vikram, Pooyan Jamshidi, Rohan Padhye, Christian Kästner.  
*International Workshop on Search-Based and Fuzz Testing (SBFT)*, 2025.
- [5] **What Is Wrong with My Model? Identifying Systematic Problems with Semantic Data Slicing**  
Chenyang Yang, Yining Hong, Grace Lewis, Tongshuang Wu, Christian Kästner.  
*International Conference on Automated Software Engineering (ASE)*, 2024
- [6] **A Large-Scale Survey on the Usability of AI Programming Assistants: Successes and Challenges**  
Jenny T Liang, Chenyang Yang, and Brad A Myers.  
*International Conference on Software Engineering (ICSE)*, 2024.
- [7] **(Why) Is My Prompt Getting Worse? Rethinking Regression Testing for Evolving LLM APIs**  
Wanqin Ma\*, Chenyang Yang\*, and Christian Kästner.  
*International Conference on AI Engineering (CAIN)*, 2024.
- [8] **Accelerating Patch Validation for Program Repair with Interception-Based Execution Scheduling**  
Yuan-An Xiao, Chenyang Yang, Bo Wang, and Yingfei Xiong.  
*Transactions on Software Engineering (TSE)*, 2024.
- [9] **Beyond Testers' Biases: Guiding Model Testing with Knowledge Bases using LLMs**  
Chenyang Yang, Rishabh Rustogi, Rachel A Brower-Sinning, Grace Lewis, Christian Kästner, and Tongshuang Wu.  
*Findings of Empirical Methods in Natural Language Processing (EMNLP)*, 2023.
- [10] **Capabilities for Better ML Engineering**  
Chenyang Yang, Rachel A Brower-Sinning, Grace Lewis, Christian Kästner, and Tongshuang Wu.  
*AAAI-23 Workshop on Artificial Intelligence Safety (SafeAI)*, 2023.
- [11] **Data Leakage in Notebooks: Static Detection and Better Processes**  
Chenyang Yang, Rachel A Brower-Sinning, Grace Lewis, and Christian Kästner.  
*International Conference on Automated Software Engineering (ASE)*, 2022.

[12] **Subtle Bugs Everywhere: Generating Documentation for Data Wrangling Code**

Chenyang Yang, Shurui Zhou, Jin L.C. Guo, and Christian Kästner.  
*International Conference on Automated Software Engineering (ASE)*, 2021.

[13] **Accelerating Program Analyses in Datalog by Merging Library Facts**

Yifan Chen, Chenyang Yang, Xin Zhang, Yingfei Xiong, Hao Tang, Xiaoyin Wang, Lu Zhang.  
*International Static Analysis Symposium (SAS)*, 2021.

INDUSTRY EXPERIENCE	<p><b>Amazon Search</b>, Applied Scientist Intern May 2024 – Dec 2024  <i>with Michael Shavlovsky, Tesi Xiao</i></p> <ul style="list-style-type: none"> <li>Worked on an interactive system to support ML practitioners design and evaluate multi-objective recommendation systems</li> </ul>
INVITED TALKS	<p><b>Guest Lecture: Design and Architecture for ML-enabled systems</b> Sep 2024  Machine Learning in Production, Carnegie Mellon University</p> <p><b>Introduction to Human-AI Interaction Research</b>, Amazon Search Aug 2024</p> <p><b>Capabilities for Better ML Engineering</b>, Siemens Mar 2023</p>
PROFESSIONAL SERVICE	<ul style="list-style-type: none"> <li><b>Organizer</b> for Beyond the Model Meeting (2025).</li> <li><b>Program Committee</b> for Bi-Align Workshop @ ICLR (2025).</li> <li><b>Reviewer</b> for EMNLP (2023), ACL ARR (2024), TSE (2024), CHI LBW (2025)</li> <li><b>Student Volunteer</b> for ASE 2020.</li> </ul>
TEACHING EXPERIENCE	<p><b>Machine Learning in Production</b>, Carnegie Mellon University Aug 2024 – Dec 2024  Instructor: Christian Kästner, Sherry Tongshuang Wu  Led weekly recitations and designed labs on model testing</p> <p><b>Large Language Model Systems</b>, Carnegie Mellon University Jan 2024 – May 2024  Instructor: Lei Li  Mentored student projects and presentations, and designed homework on distributed model training</p> <p><b>Introduction to Computer Systems (Seminar)</b>, Peking University Sep 2020 – Jan 2021  Designed and led weekly recitations for a group of 14 students</p>
MENTORING	<p><b>Cassandra Shi</b> Jun 2024 – Now  <i>CMU undergraduate student</i>  Contributed to the development of the requirements-driven prompting system</p> <p><b>Yining Hong</b> Jul 2023 – Sep 2023  <i>Tsinghua University undergraduate student (Currently a CMU PhD student)</i>  Explored the problem of semantic slicing and contributed to algorithm design for the problem</p> <p><b>Wanqin Ma</b> Jun 2023 – Nov 2023  <i>HKUST undergraduate student (Currently a HKUST PhD student)</i>  Explored the problem of LLM regression testing and conducted evaluations</p>
AWARDS & HONORS	<ul style="list-style-type: none"> <li>Award for Research Excellence, Peking University Oct 2020</li> <li>Turing Scholarship, Peking University Dec 2019</li> <li>Award for Academic Excellence, Peking University Nov 2018</li> <li>May 4th Scholarship, Peking University Nov 2018</li> </ul>
SKILLS	<p>LaTeX, Python, JavaScript/TypeScript, Svelte, React, C/C++, Java, Datalog.</p>