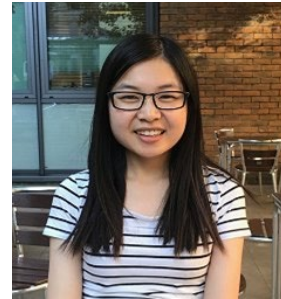




## Welcome from the Chairs



David Lo & Xin Xia  
General Co-Chairs

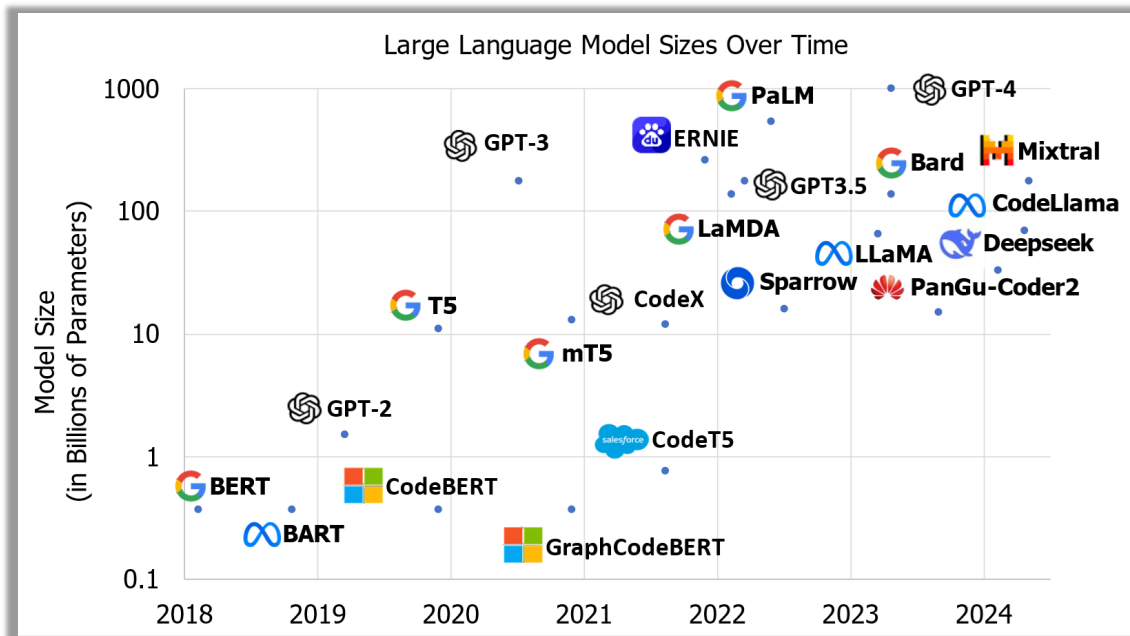


Cuiyun Gao & Denys Poshyvanyk  
Program Co-Chairs



# Welcome from the General Chairs

Foundation models are growing rapidly



Google for Developers

## Introducing PaliGemma 2: Powerful Vision-Language Models, Simple Fine-Tuning

DEC. 5, 2024

Daniel Keysers

Research Engineer

Andreas Steiner

Staff Software Engineer

Mar 12, 2025



Gemini Robotics and Gemini Robotics-ER are two new Gemini models designed for robotics.

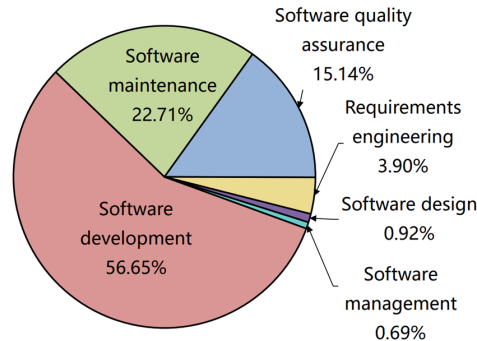
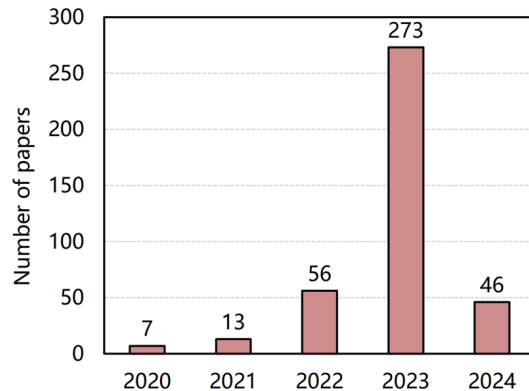


# Welcome from the General Chairs

They have impacted software engineering research and practice

## Large Language Models for Software Engineering: A Systematic Literature Review

XINYI HOU\*, Huazhong University of Science and Technology, China  
 YANJIE ZHAO\*, Monash University, Australia  
 YUE LIU, Monash University, Australia  
 ZHOU YANG, Singapore Management University, Singapore  
 KAILONG WANG, Huazhong University of Science and Technology, China  
 LI LI, Beihang University, China  
 XIAPU LUO, The Hong Kong Polytechnic University, China  
 DAVID LO, Singapore Management University, Singapore  
 JOHN GRUNDY, Monash University, Australia  
 HAOYU WANG<sup>‡</sup>, Huazhong University of Science and Technology, China



**GitHub**  
Copilot

**AI Xcoder**

**tabnine**

**overflow AI**

# Welcome from the General Chairs

However they are not without issues and limitations

## *Robustness, Security, Privacy, Explainability, Efficiency, and Usability of Large Language Models for Code*

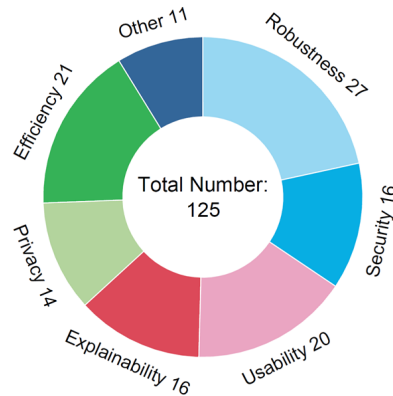
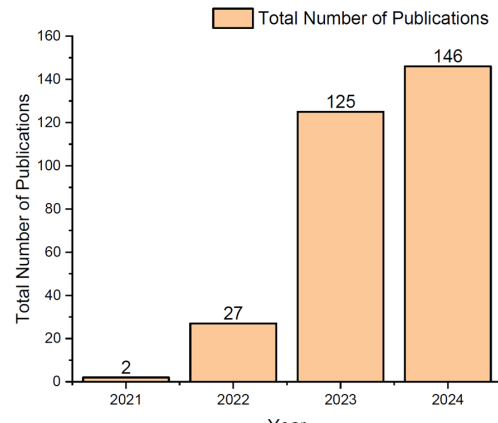
ZHOU YANG, Singapore Management University, Singapore

ZHENSU SUN, Singapore Management University, Singapore

TERRY ZHUO YUE, Singapore Management University, Singapore

PREMKUMAR DEVANBU, Department of Computer Science, UC Davis, USA

DAVID LO, Singapore Management University, Singapore



## Friend or foe: Can computer coders trust ChatGPT?

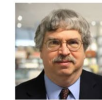


31 March 2023

By Sean McManus, Technology Reporter

Share

Using ChatGPT to Analyze Your Code? Not So Fast



MARK SHERMAN

FEBRUARY 12, 2024



## GitHub Copilot copyright case narrowed but not neutered

Microsoft and OpenAI fail to shake off AI infringement allegations

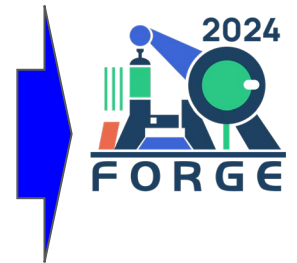


# Welcome from the General Chairs

There are many open problems requiring a dedicated community

ASE 2023

SATE - Software Engineering at the Era of LLMs





# Welcome from the General Chairs

There are many open problems requiring a dedicated community





# New to FORGE 2025!

## **Officially Upgraded to a Conference**

- Transitioned from a special event at ICSE 2024 to a standalone conference

## **Newly Introduced Tracks**

- Data and Benchmarking Track
- Industry Track
- Tutorial Track



# New to FORGE 2025!

## **Extended Duration**

- Upgraded from 1-day in 2024 to a 2-day event in 2025

## **Workshop Integration**

- Incorporates InteNSE: International Workshop on Interpretability, Robustness, and Benchmarking in Neural Software Engineering



# New for 2025

## Six keynotes (Industry and Academia)



## Banquet

- Attendees registering for both days (received emails from Feifei Niu)
- **The Waverley Elgin** (339 Elgin St, Ottawa, ON K2P 1M5), **Monday April 28th at 7:00 p.m**

# Registrants Statistics

- ~100 registrants
- 12+ different countries from ALL continents except Africa & Antarctica
  - Top 3: Canada, USA and China
- Industry (**10+ companies**) and academia
  - Google, AMD, JetBrains, Huawei, Amazon, Siemens, Ubisoft, etc.



# Organizing Committee



Antonio Mastropaolo and  
Bowen Xu,  
Data & Benchmarking  
Co-Chairs



Henry Le and  
Michele Tufano,  
Industry Co-Chairs



Reyhaneh  
Jabbarvand,  
Tutorial Co-Chair

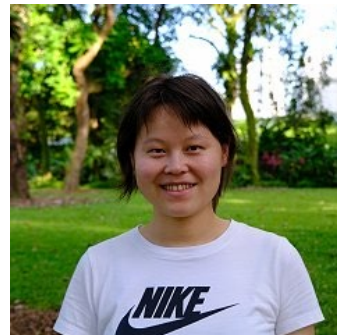
# Organizing Committee



Feifei Niu,  
Local Arrangement &  
Social Media Co-Chair



Zhensu Sun and Ting  
Zhang,  
Social Media Co-Chairs



Yujia Chen,  
Web Co-Chair



# FORGE 2025 Program



# Program Committee of Research Track

Alexander Pretschner, Antonio Mastropaolo, Chaozheng Wang, Chengpeng Wang, Chunqiu Steven Xia, Claudio Di Sipio, Cuiyun Gao, Denys Poshyvanyk, Dong Wang, Eunjong Choi, Fabio Palomba, Fuxiang Chen, Giammaria Giordano, Gilberto Recupito, Gouri Ginde, Huaming Chen, Jiakun Liu, Jialun Cao, Lili Wei, Lingfeng Bao, Matteo Ciniselli, Mohammed Shehab, Morakot Choetkiertikul, Nicole Novielli, Phuong T. Nguyen, Shangwen Wang, Shuqing Li, Shuzheng Gao, Vincenzo Riccio, WANG KAILONG, Weisong Sun, Wenchao Gu, Xiao Liu, Xiaoyu Liu, Xin Zhou, Xin-Cheng Wen, Yi Liu, Yinxing Xue, Yu Hao, Yuekang Li, Yun Peng, Zenhao Li, Zhenpeng Chen, Zhongxin Liu, Zishuo Ding, Zongjie Li

# Reviewing Process

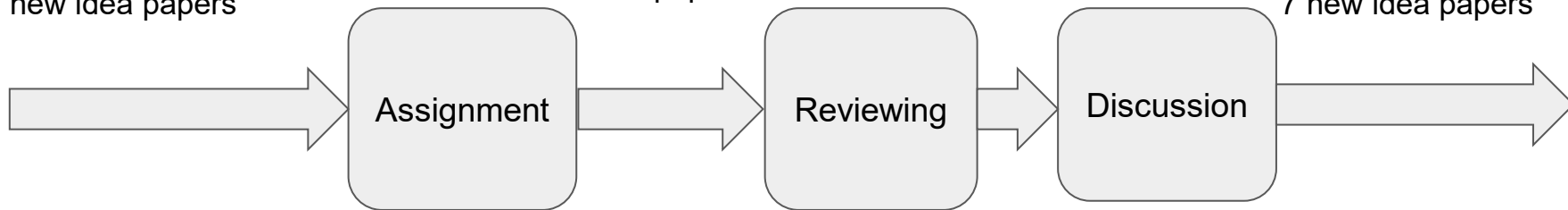
## **Submissions:**

44 full research papers  
13 new idea papers

3 reviewers for  
each paper

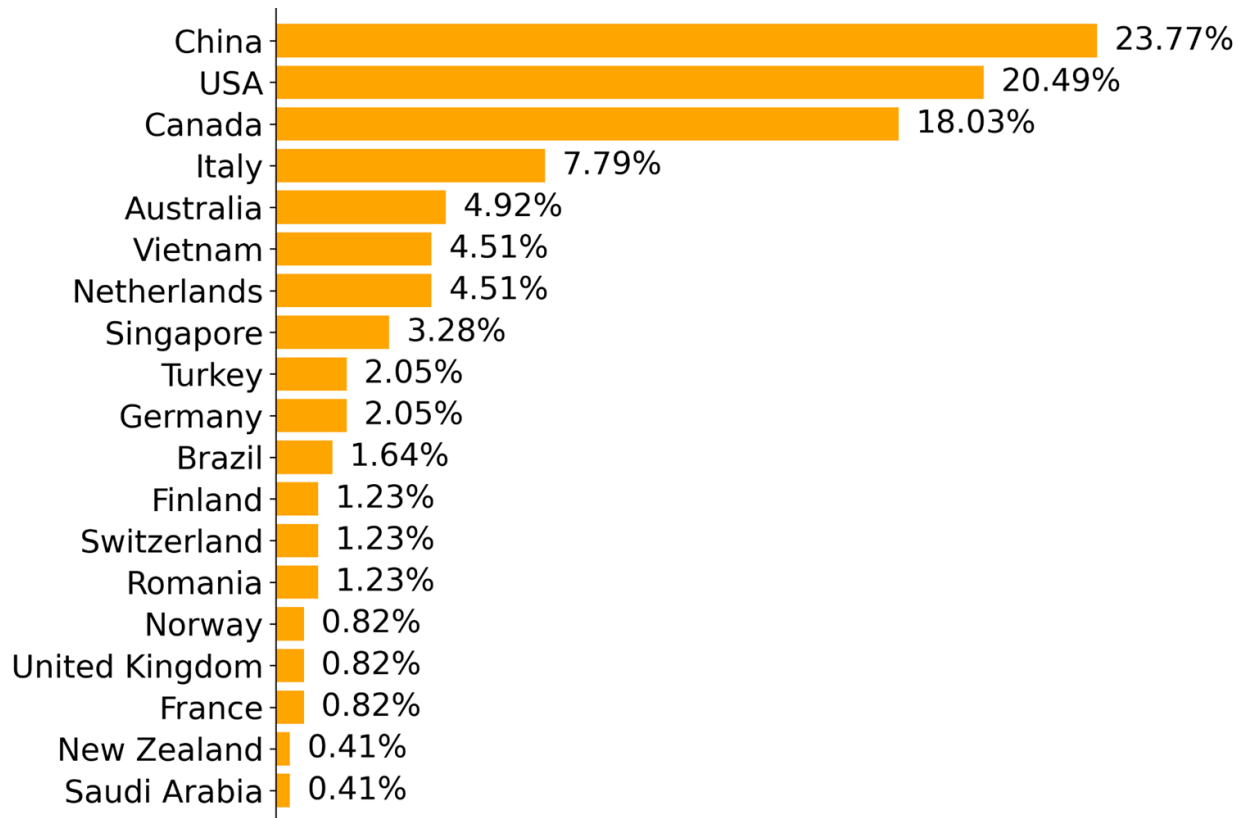
## **Accepted:**

20 research papers  
7 new idea papers





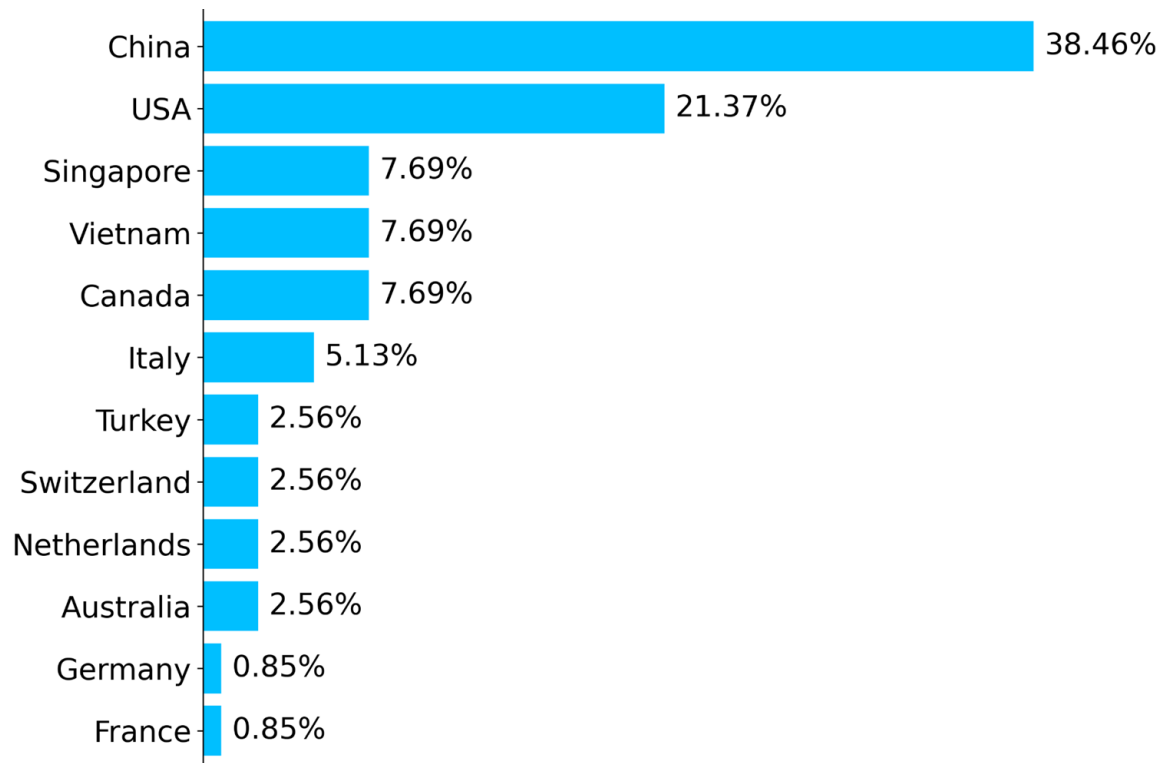
# Submitted by Country



44 full

13 new idea

# Accepted by Country



20 full (45.5%)  
7 new idea (53.8%)

[illegible]



# The Program

## Six Keynotes:

- Prem Devanbu (UC Davis)
- Thomas Zimmermann (UC Irvine)
- Graham Neubig (Carnegie Mellon University)
- Darya Rovdo (JetBrains)
- Satish Chandra (Google)
- Dong Qiu (Huawei)

## One Panel:

- Prem Devanbu; Thomas Zimmermann; Darya Rovdo



# The Program

## One Tutorial:

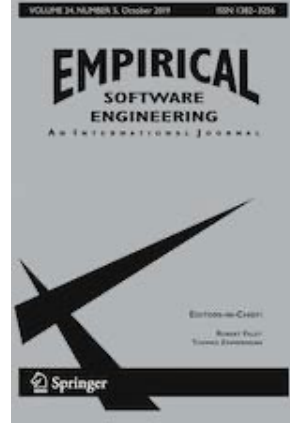
- Fatemeh Hendijani Fard (University British Columbia)

## Five Technical Sessions featuring:

- 6 min (with clarification questions) presentations for new idea papers, industry papers, data and benchmarking papers
- 12 min (with clarification questions) presentations for full research papers

# EMSE Special Issue Invitations

- J. Han, G. Wang, J. Liu, L. Bao , X. Hu, J. Wei, S. Deng. **A Comprehensive Study of Bug Characteristics on Foundation Language Models**
- Y. Peng, A. Deepak Gotmare, M. Lyu, C. Xiong, S. Savarese, D. Sahoo. **PerfCodeGen: Improving Performance of LLM Generated Code with Execution Feedback**
- C. Chi Le, H. Nhat Phan, H. Nhat Phan, T. N. Nguyen, N. D. Q. Bui. **CodeFlow: Program Behavior Prediction with Dynamic Dependencies Learning**
- D. Li, J. Tang, S. Wu, Z. Zheng, S. Ng. **Cyer-Attack Detection and Localization for SCADA system of CPSs**
- Y. Gao, X. Hu, Z. Chen, T. Xu, X. Yang. **Vulnerability-Triggering Test Case Generation from Third-Party Libraries**
- H. Wang, Z. Xu, S. Hwei Tan. **Testing Refactoring Engine via Historical Bug Report driven LLM**
- H. Nhat Phan, H. Nhat Phan, T. N. Nguyen, N. D. Q. Bui. **RepoHyper: Search-Expand-Refine on Semantic Graphs for Repository-Level Code Completion**



# Award Session



# Distinguished Reviewer Awards



# These people did an awesome reviewing work!

Chaozheng Wang

Xin-Cheng Wen

Alexander Pretschner

Chengpeng Wang

Chunqiu Steven Xia

Eunjong Choi

Fabio Palomba

# Distinguished Paper Award



# **ACM SIGSOFT Distinguished Paper Award FORGE 2025**

**The 2nd ACM international conference on  
AI Foundation Models and Software Engineering  
April 27-28, 2025 – Ottawa, Canada**



Presented to

**Yun Peng, Akhilesh Deepak Gotmare, Michael Lyu, Caiming  
Xiong, Silvio Savarese, Doyen Sahoo**

for the paper

**“PerfCodeGen: Improving Performance of LLM Generated  
Code with Execution Feedback”**



# **ACM SIGSOFT Distinguished Paper Award FORGE 2025**

**The 2nd ACM international conference on  
AI Foundation Models and Software Engineering  
April 27-28, 2025 – Ottawa, Canada**



**Presented to**

**Junxiao Han, Guanqi Wang, Jiakun Liu, Lingfeng Bao , Xing  
Hu, Jinling Wei, Shuiguang Deng**

**for the paper**

**“A Comprehensive Study of Bug Characteristics on  
Foundation Language Models”**