Dr Yixuan Li

Google Scholar Profile | 0009-0007-4619-3476 | DBLP Profile

Research

Dr Yixuan Li is a researcher whose work bridges large language models (LLMs) and formal methods to develop user-friendly frameworks for automated reasoning. His research has been published in top-tier venues spanning programming languages, formal verification, artificial intelligence (AI), and natural language processing (NLP).

Education

2022 – 2025 **PhD, Computer Science** (with full scholarship)
University of Edinburgh
Advised by Elizabeth Polgreen and Michael O'Boyle

2020 – 2021 **MSc, Image and Video Communications and Signal Processing**
University of Bristol
Distinction (GPA: 76/100)

2014 – 2018 **BEng, Electronic Information**
Xidian University

Publications & Manuscripts

Accepted at PLDI, AAAI, CAV, ACL (findings), FMCAD, SYNT.

1 **Li, Y.**, Frampton, L., Mora, F., & Polgreen, E. (2025). Online Prompt Selection for Program Synthesis. *Proceedings of the AAAI Conference on Artificial Intelligence*, *39*(11), 11282–11289. doi:10.1609/aaai.v39i11.33227

2 **Li, Y.**, Magalhães, J. W. d. S., Brauckmann, A., O'Boyle, M. F. P., & Polgreen, E. (2025). Guided Tensor Lifting. *Proc. ACM Program. Lang.*, *9*(PLDI), 1984–2006. doi:10.1145/3729330

3 **Li, Y.**, Mora, F., Polgreen, E., & Seshia, S. A. (2023). Genetic Aalgorithms for Ssearching a Mmatrix of Mmetagrammars for Ssynthesis. *Workshop on Synthesis (SYNT)*. doi:10.48550/arXiv.2306.00521

4 **Li, Y.**, Parsert, J., & Polgreen, E. (2024). Guiding Enumerative Program Synthesis with Large Language Models. In *Computer Aided Verification (CAV)* (pp. 280–301). doi:10.1007/978-3-031-65630-9_15

5 Tang, W., **Li, Y.**, Sypherd, C., Polgreen, E., & Belle, V. (2025, July). HyGenar: An LLM-Driven Hybrid Genetic Algorithm for Few-Shot Grammar Generation. In *Findings of the Association for Computational Linguistics: ACL 2025* (pp. 13640–13665). doi:10.18653/v1/2025.findings-acl.701

6 Wang, Y., Zhu, Z., van Glabbeek, R., Zhang, J., & **Li, Y.** (2025). The Similarity Control Problem with Required Events. *IEEE Transactions on Automatic Control (TACON)* *Under review*.

7 Ye, L., **Li, Y.**, Frankel, G., Cheng, J., & Polgreen, E. (2025). Unlocking hardware verification with oracle guided synthesis. In *Formal Methods in Computer-Aided Design (FMCAD)* (pp. 235–245). doi:10.34727/2025/isbn.978-3-85448-084-6_30

Experience

Sep – Dec 2025	**Research Intern**, Huawei R&D UK, Edinburgh Contributed to open-source projects including an AI browser, LLM-based code analysis, and code generation tools.
Nov - Dec 2024	**Research Assistant**, Heriot-Watt University, Edinburgh Explored LLM-assisted theorem proving within formal verification.
Jan – Jun 2024	**Teaching Assistant**, System Design Project, University of Edinburgh Supervised undergraduate teams building end-to-end robotic systems, from software design and embedded programming to physical prototyping and full robotic deployment.

Service

Co-Organizer	EuroProofNet Workshop on Theorem Proving in the Age of LLMs (2025)
Reviewer	International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS, 2025)
	EuroProofNet Workshop on Theorem Proving in the Age of LLMs (2025)

Talks and Presentations

Dec 2025	European OpenHarmony Technical Forum, Edinburgh, UK
Sep 2025	Compilers Seminar, University of Edinburgh, UK
Jun 2025	PLDI Conference, Seoul, Korea
Feb 2025	AAAI Conference, Philadelphia, USA
Nov 2024	Programming Languages Seminar, University of Bristol, UK
Oct 2024	Compilers Seminar, University of Edinburgh, UK
May 2024	LAIV AI Verification Seminar, Heriot-Watt University, UK
Mar 2024	EuroProofNet Workshop on Machine Learning in Proofs, Vienna, Austria
Jul 2023	SYNT Workshop, Paris, France

Scholarships

2022–2025	Fully Funded PhD Scholarship, The University of Edinburgh
May 2024	Verification Mentoring Workshop (VMW) Scholarship, CAV Conference
Mar 2016	University Scholarship, Xidian University

Skills

Languages	English, Mandarin, French, Japanese
Coding	Python, MATLAB, C/C++, Java, JavaScript