YINGTE XU

github.com/lucianoxu lucianoxu@foxmail.com
Suzhou, China

PERSONAL INFORMATION

Last name:	Xu	**First name:**	Yingte
Gender:	Male	**Nationality:**	P.R. China
Date of birth:	23.10.1999	**Place of birth:**	Suzhou, Jiangsu
Marital status:	Single		
Mobile:	+86 18168738671 +49 01623346102	**E-mail:**	lucianoxu@foxmail.com

EDUCATION & EMPLOYMENT

Max Planck Institute for Security and Privacy (MPI-SP) *September 2024 - now*
PhD student in Computer Science

Internship *September 2023 - August 2024*
Max Planck Institute for Security and Privacy (MPI-SP)

Internship *September 2022 - August 2023*
State Key Laboratory of Computer Science, Institute of Software, Chinese Academy of Sciences

Lanzhou University, Gansu, P.R. China *July 2018 - June 2022*
Bachelor of Science (Physics)

PUBLICATIONS

- Yingte Xu, Gilles Barthe, and Li Zhou. 2025. Automating Equational Proofs in Dirac Notation. Proc. ACM Program. Lang. 9, POPL, Article 42 (January 2025), 61 pages. https://doi.org/10.1145/3704878
- Yuan Feng, Li Zhou, and Yingte Xu. Refinement calculus of quantum programs with projective assertions. arXiv preprint arXiv:2311.14215 (2023).
- Yuan Feng and Yingte Xu. 2023. Verification of Nondeterministic Quantum Programs. In Proceedings of the 28th ACM International Conference on Archi- tectural Support for Programming Languages and Operating Systems, Volume 3 (ASPLOS '23), March 25–29, 2023, Vancouver, BC, Canada. ACM, New York, NY, USA, 17 pages. https://doi.org/10.1145/3582016.3582039

SKILLS

Programming:	C/C++, Python, Coq, Mathematica, MATLAB
ML framework:	PyTorch
Language:	Chinese (native), English, Japanese

AWARD

SQA Primary Scholarship *April 2022*
Issuing Authority: Sydney Quantum Academy

National Scholarship *December 2019*
Issuing Authority: Ministry of Education of the People's Republic of China

PERSONAL STATEMENT

I am Yingte Xu, currently a full-time PhD student at MPI-SP in Germany. My research journey began with an interest in quantum computing and programming language theory, which gradually evolved into automated theorem proving and AI.

In the early stages of my work, I focused on introducing new language features into quantum programming and developing the corresponding tools for verification and refinement calculus. During this period, I realized that automation is both the most crucial and the most challenging aspect of these tasks. This led us to study algorithms for deciding Dirac notations, a fundamental language widely used in quantum research. We developed a decision procedure that has been proven to be nearly complete, and our work was recently accepted by POPL'25. However, I am still not fully satisfied with the outcome. Formal methods for automation require tremendous effort, and as the complexity of languages continues to grow, this approach risks draining the time and energy of researchers.

At the same time, I have been following the recent breakthroughs in AI, which show great promise in areas such as automated theorem proving. I am particularly fascinated by the fact that human-like responses can emerge from language models. The idea of creating machines that can learn autonomously, think, and behave like humans is an exciting and ambitious goal, both for proof automation and in a broader sense. With my strong engineering background and eagerness to explore new fields, I am now venturing into machine learning and AI, experimenting with natural language processing and theorem proving challenges.