

JIN XING LIM

Research Scientist @ Beneficial AI Foundation

@ jinxing_1990@hotmail.com

🌐 jinxinglim.github.io

🐦 @OxJinXingLim

🌐 jin-xing-lim-840814189

🌐 jinxinglim

EXPERIENCE

Research Scientist

Beneficial AI Foundation

📅 Apr 2026 – present

Conduct research at the intersection of AI safety, formal verification, automated reasoning, and mathematics. Work on trustworthy reasoning systems and the use of formal methods to improve the reliability and safety of advanced AI systems.

Software Engineer

Fast (formerly Pi Squared Inc.)

📅 Aug 2024 – present

Worked full-time from Aug 2024 to Mar 2026 and continue to contribute part-time since Apr 2026. Develop web3 payment infrastructure for agentic payments through verifiable systems, universal liquidity, and cross-chain interoperability. Previously served as Tech Lead for key infrastructure projects at the company:

- **Verifiable Settlement Layer (VSL):** Headed the integration of VSL with AI clients and service providers, enabling fast payments and verifiable settlements between heterogeneous agents.
 - **Math Proof Generation (MPG):** Led the team developing components that generate machine-checkable proofs of program executions and enhance blockchain interoperability via zero-knowledge (ZK) technology.
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Formal Verification Engineer

Runtime Verification Inc.

📅 Sep 2022 – Aug 2024

Team lead and core developer of ERCx, a tool suite for checking conformance to ERC (Ethereum Request for Comments) standards and important security properties of smart contracts in the Ethereum ecosystem using the Foundry testing framework. Also contributed to Kontrol, an open-source tool for security analysis and formal verification of EVM smart contracts.

Lecturer

Temasek Polytechnic

📅 Jul 2014 – Aug 2018

Subject leader and lecturer for the following courses:

- Mathematics for Applied Science
 - Statistics for Applied Science
 - Biostatistics
 - Scripting for Bioinformatics
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EDUCATION

Ph.D. in Engineering Systems and Design

Singapore University of Technology and Design

📅 Sept 2018 – Aug 2022

Advisors: Georgios Piliouras and Shaowei Lin

PhD Thesis: Incentivized Mechanism Design for Collaborative Proofs and Programs through Theorem Provers and Blockchain

B.Sc. in Mathematics

Second Class Honours (Upper/Distinction)

National University of Singapore

📅 Aug 2010 – June 2014

Advisor: Yang Yue

Honours' Year Project: "Decidability of the First Order Theory of Boolean Algebra" by Tarski, A.

PROJECTS

OmniSet

OmniSet team @ Pi Squared

📅 2025

📍 Website

ERCx

ERCx team @ RV

📅 2023

📍 Website

Formalization of Divide-and-Conquer in Coq

Jin Xing Lim and Shaowei Lin

📅 2021

📍 Github

Game Theoretical Approaches in Multi-Agent Reinforcement Learning Policy Space Response Oracles

Jin Xing Lim and Sai Ganesh Nagarajan

📅 2019

📍 Github

Exploring Efficacy of Embeddings on Relation Network for Natural Language Question Answering Task

Jin Xing Lim, Zhangsheng Lai and Aik Beng Ng

📅 2018

📍 Github

PUBLICATIONS AND WRITINGS

👥 Conference

- Lim, J. X. [Jin Xing], Monnot, B., & Piliouras, G. (2022). Blockchain-based mechanism design for collaborative mathematical research. In *IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2022)*, Shanghai, China.
 - Lim, J. X. [Jin Xing], Monnot, B., Lin, S., & Piliouras, G. (2021). A Blockchain-Based Approach for Collaborative Formalization of Mathematics and Programs. In *2021 IEEE International Conference on Blockchain (Blockchain-2021)*, Virtual, Australia.
 - Lim, J. X. [Jin Xing], Monnot, B., Piliouras, G., & Lin, S. (2021). (Auto)Complete this Proof: Decentralized Proof Generation via Smart Contracts. In *Online proceedings of the 6th Conference on Artificial Intelligence and Theorem Proving (AITP 2021)* (pp. 74–76). Aussois, France.
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📄 Journal Articles

- Lim, J. X. [Jin Xing.], & Piliouras, G. (2021). Phd thesis: Incentivized mechanism design for collaborative proofs and programs through blockchain and theorem provers. Singapore University of Technology and Design.
 - Lim, J. X. [Jin Xing], Li, B. T., & Ling, M. H. T. (2019). Sequence composition. In S. Ranganathan, M. Gribskov, K. Nakai, & C. Schönbach (Eds.), *Encyclopedia of bioinformatics and computational biology - volume 3* (pp. 323–326). Elsevier.
 - Lim, J. X. [Jin Xing], & Ling, M. H. T. (2019). Gene ontology and kegg orthology mappings for 10 strains of pseudomonas stutzeri. In *Ec proteomics and bioinformatics - volume 3.1* (pp. 12–18). ECronicon.
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📖 Books

- Tan, H. M., Li, B., Lai, Z., Lim, J. X., & Chew, S. (2016). *Mathematics for applied science*. McGraw Hill Education.
 - Tan, H. M., Li, B., Lai, Z., Lim, J. X., & Chew, S. (2015). *Statistics for applied science*. McGraw Hill Education.
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Blog posts

- Preparing the Web3 Infrastructure for Billions of AI Agentic Payments. (2025). <https://blog.pi2.network/preparing-the-web3-i>
- The Stablecoin Surge is Coming. Can Blockchains Keep Up? (2025). <https://blog.pi2.network/the-stablecoin-surge-is-coming->
- Is my ERC-4626 vault token up to the standard? (2023). <https://runtimeverification.com/blog/is-my-erc-4626-vault-token-up>

AREAS OF INTEREST

AI Safety and Automated Reasoning: Trustworthy AI - Automated reasoning - Mathematical reasoning - Formal methods for reliable and safe AI systems

Formal Verification and Theorem Proving: Formalization and verification of mathematics, programs, and protocols - Proof assistants - Automated reasoning tools for theorem provers

Blockchain and Verifiable Systems: Blockchain applications - Formal verification of blockchain systems - Smart contract security - Verifiable computation - Agentic payments

Other Interests: Mathematical logic - Type theory - Category theory - Program synthesis - Explainable AI

REFEREES

Grigore Rosu

- @ Founder and CEO - Fast (formerly Pi Squared Inc.)
 - ✉ grigore@fast.xyz
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Shaowei Lin

- @ Chief Scientist - Beneficial AI Foundation
 - ✉ shaoweilin.research@gmail.com
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Georgios Piliouras

- @ Senior Staff Research Scientist - Google DeepMind
- ✉ georgios.piliouras@gmail.com