JIN XING LIM

Software Engineer @ Pi Squared Inc.

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EXPERIENCE

Software Engineer

Pi Squared Inc.

苗 Aug 2024 - present

- Tech Lead for the Math Proof Generation (MPG) team, developing components that generate machine-checkable proofs of program executions to enhance blockchain interoperability via zero-knowledge (ZK) technology.
- Tech Lead for a project integrating Verifiable Settlement Layer (VSL) with AI clients and service providers, enabling fast payments and verifiable settlements between heterogeneous agents.

Formal Verification Engineer

Runtime Verification Inc.

📋 Sept 2022 - Aug 2024

Team lead and main developer of ERCx, a comprehensive tool suite designed to verify conformance to ERC (Ethereum Request for Comments) standards and ensure the security of smart contracts in the Ethereum ecosystem. Utilized the Foundry testing framework to perform thorough analysis and validation. Contributed to the Kontrol project, an open-source tool for security analysis and formal verification of EVM smart contracts.

Lecturer

Temasek Polytechnic

July 2014 - Aug 2018

Subject leader and lecturer for the following courses: Mathematics for Applied Science - Statistics for Applied Science - Biostatistics - Scripting for Bioinformatics

EDUCATION

Ph.D. in Engineering Systems and Design Singapore University of Technology and Design

苗 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

苗 Aug 2010 – June 2014

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

PROJECTS

ERCx	
ERCx team @ RV	
2023	• Website

Formalization of Divide-and-Conquer in Coq Jin Xing Lim and Shaowei Lin

	Github
•	Onnub

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 Net	work 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.

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.

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.

Blog posts

• Is my ERC-4626 vault token up to the standard? (2023). https://runtimeverification.com/blog/is-my-erc-4626-vault-token-up

HONOURS & AWARDS

Global Young Scientist Summit 2020

Singapore University of Technology and Design Ph.D. Fellowship (2018 - 2022)

PROGRAMMING SKILLS

Python, Solidity, Foundry



2021

Coq,	К	framework
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R, Erlang, Julia

COURSES ATTENDED

Secureum Bootcamp Epoch C Raieey Gopalakrishna)	
D ec 2021	Secureum	
Ethereum Blockchain Develo	per Bootcamp With Solidity (2021)	
Ravinder Deol, Thomas Wiesner ar	nd Martin Sterlicchi	
Nov 2021	Udemy	

AREAS OF INTEREST

Blockchain: Blockchain applications - Formal verification of blockchain - Smart contract security

Theorem Prover: Formalization and verification of mathematics, programs and protocols - Automated reasoning tools on proof assistants

Others: Mathematical logic - Type theory - Category theory - Program synthesis - Explainable AI

REFEREES

Assoc. Prof. Georgios Piliouras

- @ Associate Professor Engineering Systems and Design, Singapore University of Technology and Design
- ✓ georgios.piliouras@gmail.com

Dr. Shaowei Lin

- @ Director of Research Topos Institute
- ✓ shaoweilin.research@gmail.com
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Prof. Yang Yue

- Professor Department of Mathematics, National University of Singapore
- ➡ matyangy@nus.edu.sg