Sirawit Pongnakintr

Curriculum Vitae

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Education

2024–current	**MSc Mathematics (ongoing)**, *ETH Zürich*, Zürich, Switzerland
2021–2024	**Bachelor of Science**, *École Polytechnique*, Palaiseau, France, *4.06/4.3* (min: 0, max: 4.3) Double Major in Mathematics and Computer Science, Summa Cum Laude
2017–2020	**High School**, *Mahidol Wittayanusorn School*, Nakhon Pathom, Thailand, *3.81/4.0* (min: 0, max: 4) Science School

Experience

July 2023 to August 2023 *full-time*	**Research Assistant**, *The Institute of Theoretical Computer Science and Communications, The Chinese University of Hong Kong (ITCSC, CUHK)*, Sha Tin, Hong Kong SAR Completed an 8-week research project on complexity theory, in particular, on promise constraint satisfaction problems, as a student of the Summer Research Program 2023. Supervised by Prof. Siu On Chan.
Since 2021 *part-time*	**Competitive Programming Teaching Assistant and Assistant Coach**, *The Institute for the Promotion of Teaching Science and Technology (IPST)*, Bangkok, Thailand Authored and prepared problemsets for the national competitive programming selection camp of Thailand. Coached representatives of Thailand for the International Olympiad in Informatics (IOI) during the summers between 2022-2025.
June 2020 *part-time*	**Software Engineering Volunteer**, *Feeding Thailand*, Online Volunteered as a back-end website developer for the charity project Thai food bank by Feeding Thailand to alleviate those in need during the COVID-19 situation.
March 2020 to February 2021 *full-time*	**Software Engineer**, *Brikl*, Bangkok, Thailand Worked as a software engineering intern (using React, Three.js, and Fabric.js) between March and June of 2020. Worked as a full-time front-end software engineer on July and August, then switched to full-time back-end software engineer from December 2020 to February 2021.
2018–2020 *part-time*	**Competitive Programming Instructor**, *Department of Computing, Silpakorn University*, Nakhon Pathom, Thailand Invited as a competitive programming instructor (1-2 weeks per year), training younger high school students to compete at the Thailand Olympiad in Informatics (TOI).

Languages

Thai	Native
English	Fluent (C1)
French	Intermediate (B1)

Computer skills

Programming Languages	C, C++, Python 3, JavaScript, TypeScript, x86, (and a little bit of Coq/Rocq and Lean 4)
Software Development	Git, MySQL, PostgreSQL, Firebase, Docker, Docker Compose, Flask, AWS S3, AWS Lambda, Node.js, Serverless, React, Fabric.js, Three.js, Make, CMake, (a little bit of OpenGL, CUDA, and OpenMP)

Interests

Academic	Number Theory (Modular Forms, Langlands Program), Complexity Theory (Algebraic, Structural, Geometric, Fine–grained), Algorithms (based on Groups, Graphs, and Number Theory)
General	Competitive Programming, History of Mathematics, AI Assistance in Proof Formalization, Promotion of Mathematics and Computer Science to General Audience (including scientific communication and middle/high school teaching/coaching)

Achievements

2024	**Silver medalist**, *The 2023 ICPC Southwestern Europe Regional Contest (SWERC)* As a team with Huy Le Quang and Gabriel Tostes, ranked 4 among 107 teams.
2020	**Bronze medalist**, *32nd International Olympiad in Informatics (IOI 2020)* Ranked 119 among 343 contestants.
2019	**Bronze medalist**, *31st International Olympiad in Informatics (IOI 2019)* Ranked 95 among 327 contestants.
2019	**Gold medalist**, *22nd National Olympiad in Informatics (NOI), Singapore* Top 16 from 34 invited international contestants.
2017	**Gold medalist**, *13th Thailand Olympiad in Informatics (TOI)* Top 8 from approximately 90–100 national contestants.
2015	**Participant**, *POSN Regional Olympiad Selection Camp (Second Round) in Mathematics, Silpakorn University* Top 25 from the central region of Thailand outside Bangkok. This is the round before Thailand Mathematical Olympiad (TMO).

Activities and Popularizations

2020	**Co-founder**, *Thailand Computing Olympiad (THACO) 2020*, Online Hosted an online competitive programming competition for Thai students and enthusiasts to practice and compete.
2020	**Mathematics Editor**, *The ResearcherTH*, Online Helped in a podcast project maintained by a high school friend, Porames Vatanaprasarn. Authored and coauthored a few mathematical videos.

Lab Research Project

Title	*Introduction to Elliptic Curves*
Supervisor	Prof. Diego Izquierdo
Description	An individual study on introductory algebraic geometry of elliptic curves.
Project Report	https://github.com/plumsirawit/about-2023/blob/main/elliptic_curves_report_rev2.pdf

Bachelor Thesis

Title	*Elliptic Curves: Cryptography and Mordell–Weil theorem*
Supervisor	Prof. Diego Izquierdo
Description	The thesis is a continuation of the lab research project, exploring applications of elliptic curves in cryptography and the Mordell–Weil theorem over $\mathbb{Q}$.
Report	https://github.com/plumsirawit/about-2023/blob/main/thesis_final.pdf