LABIX SIN LONG, LIU

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Academics Qualifications

Queen Mary University of London – PhD in Mathematics United Kingdom | Nov 2025 – Present

- Advisor: Ingrid Amaranta Membrillo Solis
- Title (TBC): Cohomological Rigidity of Toric Spaces
- Created a python program to handle operations on simplicial complex and to serve as an interface to Macaulay2

University of Warwick – MMath in Mathematics (**81.7%**) United Kingdom | Sep 2021 – Jun 2025

- Achieved 1st (**77.5%**) first year, 1st (**79.6%**) in second year, 1st (**87.3%**) in third year
- Module Choice Includes: Rings and Modules (**92%**), Category Theory (**90%**), Introduction to Group Theory (**92%**), Algebraic Topology (**85%**), Intro to Topology (**89%**), Manifolds (**89%**)
- Second Year Essay on Category Theory (**75%**), Third Year Essay on Kähler differentials (**74%**)
- Completed a J3 equivalent Japanese course

Pui Ching Middle School – HK Diploma of Secondary Education Hong Kong | Sep 2018 – Jun 2021

- Mathematics (**5** - **A* Equivalent**)
- Extended Mathematics 2 (**5* - A* Equivalent**), Information and Communication Technology (**5* - A* Equivalent**)
- English (**5**), Biology (**5**), Chemistry (**5**)

GRE – **Mathematics** United Kingdom | Nov 2023

- Completed a three hour examination on university level Mathematics on all modules
- **72**th Percentile, Scaled score of **790**

Japanese Language and Culture Seminar Japan | Jul 2023

- Chosen by the language department of University of Warwick and Hiroshima Shudo University to undergo a series of intense seminars on Japanese
- Received a final grade of **92%**

Deep Learning by DeepLearning.AI on Coursera Online | Jan 2024

- Completed 5 courses on deep learning including: Neural Networks and Deep Learning, Improving Deep Neural Networks, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models
- Learnt of processing tasks including object detection, facial recognition, audio translation, language translation and more
- Received a final grade of **97%**

Experience

Queen Mary University of London – Graduate Teaching Assistant United Kingdom| Oct 2026 – Present

- Seminar tutor for 3 groups in Numbers Sets and Functions.
- Involves providing feedback, answering questions, giving exercises and explaining concepts colloquially

University of Warwick – Graduate Teaching Assistant United Kingdom| Oct 2024 – Jun 2025

- Became a supervisor for **15** 1st year students.
- Involves marking assignments, providing feedback, answering questions and explaining concepts colloquially

Edxtore – Research Intern Hong Kong| Jul 2024 – Aug 2024

- Research and experiment on a proof of concept for math question generation
- Involves reading academic papers, comparing results and feasibility of implementation
- Wrote python code to implement modified pipelines suggested by academic papers

Small Class Teaching Online| Jul 2023 – Jan 2024

- Taught a class of **10** elite students from my high school on university level maths
- Designed the course structure, marked assignments, prepared own set of handouts

Private Tutoring Online / Hong Kong| Apr 2021 – Present

- Tutored **20** students from different backgrounds for public exam
- Prepared own set of handouts and exercises, as well as marking them

Grants

QMUL Faculty - S and E - New Talent Research Enabling Scheme (NTE) London, United Kingdom| 2025 - Present

- Covers tuition fee and provides a stipend during the PhD

Workshops & Conferences

Warwick Macaulay2 Workshop Warwick, United Kingdom| Jul 2026

- A **5** day workshop on learning to code in Macaulay2 in a group setting.
- Overhauled and introduced new methods in the toricVectorBundles package.

British Early Career Mathematicians' Colloquium Birmingham, United Kingdom| Jun 2026

- Presented a poster in the Cohomological Rigidity of Moment Angle Manifolds

Graduate Training Workshop for the Mathematical Sciences Cambridge, United Kingdom| Jan 2025

- A workshop with a focus on learning how to communicating mathematics to different audiences
- Was awarded a fee waiver for the workshop

School Activities

Undergraduate Research Seminar – Queen Mary United Kingdom | Oct 2026 – Now

- The organizer of weekly talks for undergraduate students by inviting fellow professors in Queen Mary

Academic Talks Coordinator – Warwick Maths Society United Kingdom | Jun 2023 – May 2024

- Organized weekly talks for Mathematics students by inviting fellow professors in Warwick for **20** weeks consecutively
- Main organizer of Warwick Imperial Maths Conference, recruiting multiple students from both Warwick and Imperial to give talks on a piece of Mathematics they are passionate about
- Catered for over **200** students from both Universities, as well as dealing with the logistics of hosting the event

Subcommittee Member – Cantonese Society United Kingdom | Oct 2021 – Sep 2022

- Created weekly posts for the society to promote Hong Kong Culture, as well as advertising for events

Achievements

Integration Bee Competition United Kingdom | Nov 2021

- Finalists for the inter-school competition hosted by University of Cambridge
- Represented University of Warwick as the First Seed

National Olympiad in Informatics Hong Kong | Nov 2019

- Competition on programming and computer science
- Qualified for Semi-finals but was unable to participate due to protesting in Hong Kong

Innovation and Technology Design Competition Hong Kong | Nov 2018

- Participated in Kowloon Lok Sin Tong Caring for the Underprivileged – Hong Kong Innovation and Technology Design Competition
- Coded a functional app that calls upon nearby app holders when elderlies are in trouble
- Lead a team of two and received the Creativity award for having an outstanding idea

Mathematics Project Competition Hong Kong | Oct 2017 – Apr 2018

- Awarded a merit in the project held by the Hong Kong Education Bureau
- Discussed the Conway sequence and its properties, as well as similar derivations

Volunteering

Warwick Awards – 16 Hours United Kingdom | Oct 2022 – Apr 2023

- Holly Tree Bashing for Canley Green Spaces
- Environment Surveying for Canley Green Spaces

Hospital Volunteering – 80 Hours Hong Kong | Jul 2019 – Aug 2019

- Program by the Pamela Youde Nethersole Eastern Hospital to support the short-staffed hospitals
- Ran a rehabilitation medicine shop for **4** weeks
- Promoted organ donation, amassing a total of **300** volunteers
- Managing medical records of patients

Tutoring for Non-ethnic Chinese – 40 Hours Hong Kong | Sep 2016 – Jun 2019

- Participated in varies organization's programmes to support the non-ethnic Chinese community
- Taught languages and mathematics as well as enticing self-learning to children of the non-ethnic Chinese community

Others

Languages: English (Native), Cantonese (Native), Mandarin (Native), Japanese (Advanced)
Programming Languages: Python (Advanced)

Soft Skills: Problem Solving, Critical Thinking, Self-Learning, Communication Skills
Hard Skills: Independent Research, MS Office, Excel, Access

Interests: Philosophy, Language learning