

# Alex Lin Ling

PHD CANDIDATE IN COMPUTER SCIENCE

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## Summary

I am a Ph.D. student in Computer Science at City University of Hong Kong. Advised by Dr. Chee Wei Tan, my research interests include convex optimization and distributed algorithms, as well as their applications in graph analytics, machine learning and large-scale education. My research has been featured on the IEEE Information Theory Society Newsletter [🔗](#).

I am also an entrepreneur and an active open-source contributor. I co-founded an AI startup [🔗](#) that is incubated in the Hong Kong Science Park and generating steady revenue. I have been maintaining and contributing to open-source projects for years and I have received over four hundred stars on GitHub [🔗](#).

## Education

### City University of Hong Kong

PH.D. IN COMPUTER SCIENCE

Hong Kong

Sept. 2017 - PRESENT

### City University of Hong Kong

B.SC. IN APPLIED PHYSICS

Hong Kong

Sept. 2013 - July, 2017

- Majored in Applied Physics and minored in Computer Science
- On the Dean's List for four times
- My final year research was awarded *Outstanding Academic Papers by Students (OAPS)*

## Recent Activities

### Princeton University

VISITING RESEARCH COLLABORATOR

Princeton, NJ

Nov. 2019 - May 2020

Invited by Dr. Yuxin Chen, I worked as a research collaborator at the department of Electrical Engineering, Princeton University. I worked on the problem of crowd-sourced rank aggregation, and we are preparing a paper submission for ICML 2021.

### NASA SpaceApps Challenge Hong Kong [🔗](#)

ORGANIZATION COMMITTEE CHAIRMAN

Hong Kong

Oct. 2019, Oct. 2020

The SpaceApps Challenge is a global hackathon spearheaded by NASA, and I worked as the chief organizer to bring it to Hong Kong for the first time. I collaborated with the team to invite speakers and judges, seek external fundings, and organize the whole event.

## Honors & Awards

### ACADEMIA

2020 - 2021 **Research Tuition Scholarship**, City University of Hong Kong

Hong Kong

2017 - 2021 **Postgraduate Studentship**, University Grants Committee of Hong Kong

Hong Kong

Mar. 2018 **Outstanding Academic Papers by Students**, City University of Hong Kong

Hong Kong

2013 - 2017 **Dean's List** ×4, City University of Hong Kong

Hong Kong

2013 - 2017 **Half Tuition Fee Scholarship**, City University of Hong Kong

Hong Kong

### ENTREPRENEURSHIP

The tech startup I co-founded and served as CTO received the following awards:

2020 - 2023 **Incu-Tech Incubation Programme**, HK\$1,290,000, HKSTP

Hong Kong

Aug. 2020 **Bright Future SME's Youth Creative Entrepreneurship Award**, HKGCSMB

Hong Kong

2018 - 2020 **Incu-App Incubation Programme**, HK\$860,000, HKSTP

Hong Kong

2018 - 2019 **Technology Start-up Support Scheme for Universities**, HK\$746,667, HKITC

Hong Kong

### SOFTWARE DEVELOPMENT

Jun. 2016 **Grand Prize**, AngelHack

Shen Zhen, China

Apr. 2016 **Think Out of The Box Award**, HackUST

Hong Kong

## Publication

## JOURNAL ARTICLES

S. W. Ho, **L. Ling**, C. W. Tan and R. W. Yeung, *Proving and Disproving Information Inequalities: Theory and Scalable Algorithms*, IEEE Transactions on Information Theory, 2020 Trans. IT

## CONFERENCE PAPERS

C. W. Tan, **L. Ling**, P. Yu, C. N. Hang and M. F. Wong, *Mathematics Gamification in Mobile App Software for Personalized Learning at Scale*, IEEE Integrated STEM Education Conference, 2020 ISEC 2020

C. W. Tan and **L. Ling**, *Automated Reasoning by Convex Optimization: Proof Simplicity, Duality and Sparsity*, 54th Annual Conference on Information Sciences and Systems, 2020 CISS 2020  
(Invited Paper)

**L. Ling**, C. W. Tan and S. W. Ho, R. W. Yeung, *Scalable Automated Proving of Information Theoretic Inequalities with Proximal Algorithms*, IEEE International Symposium on Information Theory, 2019 ISIT 2019

**L. Ling** and C. W. Tan, *Human-assisted Computation for Auto-Grading*, IEEE International Conference on Data Mining Workshops, 2018 ICDMW 2018

**L. Ling** and C. W. Tan, *Pilot Study on Optimal Task Scheduling in Learning*, 5th Annual ACM Conference on Learning at Scale, 2018 L@S 2018

## BOOK CHAPTERS

**L. Ling** and C. W. Tan, *Social Learning Network and Its Applications in Large Scale Online Education through Chatbot*, in *Online Social Networks: Perspectives, Applications and Developments*, Nova Science Publishers, 2020 Invited Chapter

C. W. Tan, P. D. Yu and **L. Ling**, *Teaching Computational Thinking Using Mathematics Gamification in Computer Science Game Tournaments*, in *Computational Thinking Education*, Springer, 2019 Invited Chapter

## Talks & Seminars

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**Proving Inequalities in Information Theory: Theory, Computational Challenges and Scalable Solutions** Hong Kong

SEMINAR AT CCCN (CENTRE FOR CHAOS AND COMPLEX NETWORKS), CITYU HK Oct. 2018

**Educational Mobile App for the JRMF Math Festival** Taipei, Taiwan

THE 8TH ICMI-EAST ASIA REGIONAL CONFERENCE ON MATHEMATICS EDUCATION (EARCOME 8) May 2018

## Teaching

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I worked as a teaching assistant for the following courses, where my duties include giving tutorials as well as designing and grading assignments.

- **GE 2340** Artificial Intelligence – Past, Present, and Future
- **CS 2468** Data Structure and Algorithms
- **CS 3334** Data Structures
- **GE 2315** Security and Privacy in the Information Age
- **CS 2115** Computer Organization

## Languages

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- **English** Advanced
- **Cantonese** Native
- **Mandarin Chinese** Native