

# Curriculum Vitae

Li, Kwing Hei

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## Basic Info

**Preferred name:** Heili

**Email:** [hei.li@cs.au.dk](mailto:hei.li@cs.au.dk)

**Web:** <https://hei411.github.io/>

## Research Topics

The very heart of my research interests is programming languages. I develop mathematical models and methods that enable us to design, implement, and reason about computer programs, especially those that involve concurrency.

At the moment, I am also interested in related topics, such as formal verification, type theory, and distributed systems.

## Education

- 2023 - 2027 Ph.D. in Computer Science (in progress)  
Aarhus University
- 2022 - 2023 M.Phil in Advanced Computer Science (Pass with Distinction)  
King's College, University of Cambridge  
Title: Wait-Free Task Solvability of Asynchronous Distributed Models [\[pdf\]](#)
- 2019 - 2022 B.A. Hons. in Computer Science with Mathematics (1st class)  
Churchill College, University of Cambridge  
Title: Type Systems for Functional Reactive Programming [\[pdf\]](#)

## Experience

- 2022 Research Intern  
Max Planck Institute for Software Systems  
Supervisor: Prof. Derek Dreyer and Mr. Michael Sammler
- 2021 Undergraduate Research Intern  
University of Cambridge Machine Learning Systems Lab  
Supervisor: Prof. Nicholas Lane and Dr. Pedro Porto Buarque de Gusmao
- 2020 Automation Engineer Intern  
DreamsAI, Hong Kong

## Awards

- 2022 Beatrice Blore-Browne Prize Scholarship
- 2022 Cambridge Trust and King's College TPP Alan Turing Scholarship

2022 University of Oxford Hong Kong Jockey Club Graduate Scholarship (declined)  
2022 Churchill Prize Scholarship  
2021 Beatrice Blore-Browne Prize Scholarship  
2021 Churchill Prize Scholarship  
2021 Churchill Computer Science Talks Series – Audience Favourite Talk  
2020 Churchill Honorary Scholarship

## Publications

2022 **Secure Aggregation for Federated Learning in Flower** [\[pdf\]](#)  
Kwing Hei Li, Pedro Porto Buarque de Gusmão, Daniel J. Beutel, Nicholas D. Lane  
*In DistributedML 2021: Proceedings of the 2nd ACM International Workshop on Distributed Machine Learning*

## Unpublished Drafts

2023 **The Fundamental Theorem of Asynchronous Distributed Models in Intuitionistic Logic** [\[pdf\]](#)  
Kwing Hei Li  
2022 **Formalizing May’s Theorem** [\[pdf\]](#)  
Kwing Hei Li  
2022 **Flower: A Friendly Federated Learning Research Framework** [\[pdf\]](#)  
Daniel J. Beutel, Taner Topal, Akhil Mathur, Xinchu Qiu, Javier Fernandez-Marques, Yan Gao, Lorenzo Sani, Kwing Hei Li, Titouan Parcollet, Pedro Porto Buarque de Gusmão, Nicholas D. Lane

## Roles

2022 - 2023 Safety and Welfare Officer  
Churchill College Boat Club  
2021 - 2022 Computing Officer  
Churchill College JCR Committee  
2020 - 2022 Coxing Captain  
Churchill College Boat Club

## Skills

**Coding:** Haskell, C++, Java, OCaml, Coq, Python, Eva

**Languages:** English (fluent), Cantonese (fluent), Mandarin (conversational)