

Curriculum Vitae

Li, Kwing Hei

August 27, 2024

Basic Info

Preferred name: Heili

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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

2024	<p>Error Credits: Resourceful Reasoning about Error Bounds for Higher-Order Probabilistic Programs [pdf] Alejandro Aguirre, Philipp G. Haselwarter, Markus de Medeiros, Kwing Hei Li, Simon Oddershede Gregersen, Joseph Tassarotti, Lars Birkedal <i>In ICFP 2024: Proceedings of the 29th ACM SIGPLAN International Conference on Functional Programming</i> Recipient of Distinguished Paper Award</p>
2022	<p>Secure Aggregation for Federated Learning in Flower [pdf] Kwing Hei Li, Pedro Porto Buarque de Gusmão, Daniel J. Beutel, Nicholas D. Lane <i>In DistributedML 2021: Proceedings of the 2nd ACM International Workshop on Distributed Machine Learning</i></p>

Unpublished Drafts

2023	<p>The Fundamental Theorem of Asynchronous Distributed Models in Intuitionistic Logic [pdf] Kwing Hei Li</p>
2022	<p>Formalizing May’s Theorem [pdf] Kwing Hei Li</p>
2022	<p>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</p>

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)