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Kiran Gopinathan

Computer Science PhD Candidate working on Verified Software Maintenance.

Fluent in OCaml and Coq.

Education & Qualifications

2019 August - Present	Pursing PhD at National Univesity of Singapore under the School of Computing Dept.
	Awarded the 2023 NUS's Dean's Graduate Research Excellence Award
	Given to senior PhD students who have made significant achievements in their PhD study.
2019 May - June	Achieved a First Class Honours Bachelor's Degree in Computer Science from UCL
	Graduated from University College London
	Awarded Goldsmid Medal for the top graduating student of the Faculty of Engineering
2016 May - June	Achieved 4 A* A level grades in Physics, Chemistry, Further Maths and Maths
	Graduated from Magdalen College School
2014 May - June	Achieved A* GCSE grade in Maths Biology, Chemistry, Physics, French, English language and literature, Geography & Art

Publications

2023   K. Gopinathan, M. Keoliya, and I. Sergey. Mostly automated proof repair for verified libraries. *PLDI*, 2023

Awarded ACM SIGPLAN Distinguished Paper Award

S. Thy, A. Costea, K. Gopinathan, and I. Sergey. Adventure of a lifetime: Extract method refactoring for rust. *OOPSLA*, 2023

M. Flatt, T. Allred, N. Angle, S. D. Gabrielle, R. B. Findler, J. Firth, K. Gopinathan, B. Greenman, S. Kasivajhula, A. Knauth, J. A. McCarthy, S. Phillips, S. Porncharoenwase, J. A. Søgaard, and S. Tobin-Hochstadt. Rhombus: A new spin on macros without all the parentheses. *OOPSLA*, 2023

2023   S. Thy, A. Costea, K. Gopinathan, and I. Sergey. Adventure of a lifetime: Extract method refactoring for rust. *OOPSLA*, 2023

2021   Y. Watanabe, K. Gopinathan, G. Pîrlea, N. Polikarpova, and I. Sergey. Certifying the synthesis of heap-manipulating programs. (ICFP), 2021

2020   K. Gopinathan and I. Sergey. Certifying Certainty and Uncertainty in Approximate Membership Query Structures. *CAV*, 2020

Awarded Silver Medal for the PLDI 2020 Student Research Competition

2019   K. Gopinathan and I. Sergey. Towards mechanising probabilistic properties of a blockchain. *CoqPL*, 2019

2018   K. Gopinathan, N. A. Kaloumenos, K. Ajmera, A. Matei, I. Williams, and A. Davis. FHIR FLI: an open source platform for storing, sharing and analysing lifestyle data. *ICT4AWE*, 2018

Work Experience

2019   **Aetna International Research Internship,** London

- Researched the use of Deep Learning techniques for the processing of FHIR insurance data in collaboration with the Aetna International Health Insurance company.
- As part of the internship, designed and implemented several industrial-scale machine learning pipelines, gaining experience with the processes of large scale data mining.

2018   **UCL PPLV Research Internship - Probchain,** London

- Performed research into the mechanisation of the paper "Analysis of the Blockchain Protocol in Asynchronous Networks", the results of which were presented at the COQPL 2019 Conference.
- Over the course of the placement, became familiar with the overall formal verification process and gained proficiency with the Coq proof assistant.