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Kiran Gopinathan

Computer Science PhD Candidate interested in Program Verification.

Fluent in OCaml and Coq.

Education & Qualifications

- 2019 August - Present* Pursuing PhD at National University of Singapore under the School of Computing Dept.
- 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
- 2015 May - June* Took AS Exams in Physics, Chemistry, and Economics
Took A2 Exam in Maths
- 2014 May - June* Achieved A* GCSE grade in Biology, Chemistry, Physics, French, English language and literature, Geography & Art
- 2013 May - June* Achieved A* GCSE grade in Maths

Publications

- 2021* Y. Watanabe, K. Gopinathan, G. Pirlea, 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 Second Place 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.
- 2018* **ICT4AWE Conference Short Paper - FHiR FLI**,
- Co-authored a paper on designing a platform to use the FHIR format with lifestyle data.
 - Presented the results of the research at the ICT4AWE International Conference on Information and Communication, learning how to speak effectively to an academic audience.
- 2018* **CBC Digital Health Conference Position Paper**,
- Performed data aggregation for a paper on behavioural change techniques currently in use in health skills on the Amazon Alexa.