# Srinath Kailasa

srinathkailasa@gmail.com 0000-0001-9734-8318 skailasa https://srinath.info

## Education

Sep 2020 – Sep 2023 | **University College London**
*PhD Mathematics*

Sep 2018 – Sep 2020 | **University College London**
*MSc Scientific Computing, with Distinction*

Sep 2013 – Jun 2017 | **Durham University**
*MPhys Physics, II:1*

## Technologies

**Languages** Python (8 years), Matlab (3 years), Rust JavaScript (1 year), C++/C Haskell Miranda Go (< 1 year)
**Tools & Frameworks** OpenMP MPI CUDA OpenCL Numba (3 years), Flask React/React-Native (2 years), Django AWS GCP TensorFlow Slurm (< 1 year)
**Databases** Postgres Elasticsearch MongoDB (1 year)
**Other** Git(hub) Latex (5 years)

## Work Experience

Sep 2018- Sep 2023 | **University College London**
*Graduate Student*

- My research involves developing algorithms and high-performance software to solve problems that arise in science and engineering, usually described by partial differential equations.
- During my first year of research I wrote PyExaFMM, an open source Python implementation for the Fast Multipole Method, and a corresponding paper [1]. I showed that it was possible to write clean and extensible Python code, for an algorithm that contains a complex hierarchical tree data structure, that had performance approaching that of the state of the art C++ implementation by using Numba for acceleration. **link**
- I was the top student in my cohort during my Master's degree, graduating with a strong distinction (82 %).

Apr 2022 - Jun 2022 | **Inria**
*PhD Research Intern*

- I will be visiting Inria-Nancy as a PhD Intern as a part of the UCL-Inria exchange program.
- I will be working on creating Rust based software for solving boundary element problems at scale.

Apr 2019 - Sep 2019 | **Enthought**
*Scientific Software Engineer Intern*

- Worked on a bespoke desktop image analysis app for a client in the semiconductor industry, written mainly in Python.
- Gained experience of open source development by contributing to Enthought's popular Python repos (Traits, Chaco, Envisage etc).

Sep 2017 - Dec 2018

**Cytora**
*Data Analyst and Software Engineer*

- Learned professional software engineering techniques, how to write performant and well tested code, and use modern cloud services, in the context of a fast-growing FinTech startup.
- Wrote the first iteration of an address search-engine product still being shipped by the company, using Python and Elasticsearch, **link**.

Jun 2017 - Sep 2017

**Cambridge Quantum Computing**
*Research Intern*

- Researched methods for optimising compilers for new quantum architectures.
- Wrote simulation software in Matlab and Python.
- My simulations showed that it was possible to use inspiration from classical sorting network algorithms to model certain compilation regimes.

Jun 2016 - Sep 2016

**Humboldt University of Berlin**
*Research Intern*

- Implemented and studied models of cockroach olfaction.
- Learned some principles of computational neuroscience, and data analysis with Python.
- Presented a poster at the annual Bernstein Conference about my research [2].

## Publications

2021 | 1. **Kailasa, S.**, Wang, T., Barba, L. A. & Betcke, T. PyExaFMM: Designing a High-Performance Point Fast Multipole Solver in Python with Numba. *Manuscript in Preparation* (2021).

2016 | 2. **Kailasa, S.**, Betkiewicz, R., Bardos, V., Kloppenburg, P. & Nawrot, M. P. Single Neuron Model Description and Intrinsic Properties of Different Neuron Types in the Cockroach Antennal Lobe. *Bernstein Conference* (2016).

## Awards

2020 | **EPSRC** PhD Studentship, full fees and stipend.

2019 | **UCL Enterprise** Startup competition, 3rd place, £1500.

2017 | **Durhack** University Hackathon, 'Best Use of Data', £50.

2016 | **DAAD** German government scholarship to fund my research in Berlin, £2200.

2014 | **BP** Scholarship for my undergraduate studies, only 90 are awarded annually across Britain, £20,000.

## Interests

My main interests are in music and film, I love going to gigs and festivals with friends. I also enjoy endurance fitness challenges, over the past 5 years I have cycled through Europe, trekked 100 miles across Iceland, and ran a marathon!