

Research Fellow (multiple positions)

Who are we?

We are the University of Cambridge presence in Singapore called Cambridge CARES (Cambridge Centre for Advanced Research and Education in Singapore) sponsored by the National Research Foundation (NRF) of Singapore as part of its CREATE program. Cities Knowledge Graph is an Intra-CREATE collaborative project under the urban systems theme. The project brings together expertise from Cambridge CARES as the host institution of the project, and SEC (the Singapore-ETH Centre, established by ETH Zürich). The team is led by principal investigators from the University of Cambridge and ETH Zürich.

Urban growth is driving the need for sustainable operational models for city planning. Simultaneously, the proliferation of urban data has introduced a fragmentation into myriad types, formats, and qualities, hindering data integration into urban planning. The project aims to address one of the grand challenges in urban planning today: to connect and catalyse the unprecedented growth of cities and the exponential proliferation of data. The project will develop a Master-planning Knowledge-Graph, transforming the conventional instrument of urban planning – the city master-plan – into a knowledge management system that supports cross-domain evaluations of planning proposals by enabling the integration of siloed data, software tools and Application Programming Interfaces from disparate knowledge domains. The overall goal is, using ideas from Smart Nation, Internet of Things, the Semantic Web, machine learning, and statistics, to create a system allowing planners to explore and compare more variations and more iterations for a particular development proposal, leading to improved master-plans.

Our team is comprised of world-class scientists and engineers working in a vibrant, fast-paced environment with great opportunities for knowledge and skills development.

Who are we looking for?

The ideal applicant will assume intellectual leadership in the development of the theoretical foundations as well as the wider, ongoing development of our knowledge-graph and autonomous agent software. This will involve keeping abreast of the latest web-technologies, making key design decisions, and ensuring their realisation. The specific research topic will fit into the above problem description. (Example publications can be found [here](#).)

The successful candidate will be expected to:

- Publish research results in high-quality international peer-reviewed journals.
- Design, develop, test, deploy, maintain, and improve software.
- Lead designs of major software components, systems, and features.
- Mentor and train other team members on design techniques and coding standards.
- Make strategic decisions on complicated and ambiguous technical problems.

What skills do you have?

- A PhD degree in a relevant discipline such as mathematics, computer science, (theoretical) physics/chemistry, (electrical) engineering, or a related subject.

- Experience with one or more general-purpose programming languages such as Java, Python, JavaScript, C/C++, as well as version-control tools such as git.
- A good publication record in at least one of the research areas concerned.
- Excellent oral and written communication skills.
- The ability to work as part of a dynamic, multidisciplinary team of researchers.

What can we offer you?

- A stimulating working-environment with friendly, highly motivated colleagues.
- Opportunities to develop and implement new ideas in a creative environment.
- A competitive salary in line with your skills and experience.
- A one-year contract in the first instance, extendable following satisfactory performance.
- A comprehensive medical insurance cover as part of your employment.

Please note this post is based in the CREATE Tower at NUS University Town, Singapore.

How to apply?

Please send your CV and cover letter, summarising the skills and experience you have that are most relevant for the position, to careshr@hermes.cam.ac.uk.