Research Associate

Who are we?

We are the University of Cambridge's presence in Singapore, Cambridge CARES. Our activities are sponsored by the National Research Foundation's CREATE programme. **Consumer Energy Usage Data in Smart City Development** (CEUS) is an Intra-CREATE collaborative project. 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.

Cities are becoming increasingly smart, dynamic, and complex composite systems – fundamentally changing the way we live and work, and improving the quality of life. The project aims to provide new forms of consumer semantics to expand the smart city planning of the future. A Singapore-specific Common Information Model will allow consumers to make better decisions around their energy use. In addition, the project will develop an autonomous agent framework in the CARES J-Park Simulator that enables a seamless and effective consumer energy usage data exchange with third party services. Amendments to the existing energy policy framework to implement the proposed technical solution in a smart city environment will also be suggested in this project.

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 combine knowledge on urban design and planning with affinity for computing and civil engineering. The candidate will have an understanding of the functioning of urban systems and grasp concepts for planning for a sustainable and resilient future while assuming intellectual leadership in the command of different interactive cartography, visualisation and simulation software such as Q-GIS, BIM programming software and CAD programmes. Ideally the candidate has experience in general-purpose programming languages such as Java, Python and knowledge graphs, though given an affinity for programming, the relevant skills can be acquired on the job. This will involve keeping abreast of the latest web-technologies, making key design decisions, and ensuring their realisation.

The successful candidate will be expected to:

- Design, develop, test, deploy, maintain, and improve software.
- Identify policy contexts for case study designs.
- Contribute to innovative approaches for supporting the design and implementation of smart cities.
- 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.
- Collaborate with team to understand needs for actionable insights.
- Design and develop executable programs and browser-based applications.
- Create semantic representations of data, models and algorithms.
- Communicate technical concepts to non-technical stakeholders.
- Participate in research discussions.

- Write conference / journal papers and reports.

What skills do you have?

- A degree in a relevant discipline such as urban planning, computer science, (theoretical) physics/chemistry, (civil) engineering, architecture or a related subject.
- Experience with or willingness to learn general-purpose programming languages such as Java, Python, JavaScript, C/C++, as well as version-control tools such as git.
- Excellent visualisation and understanding skills.
- 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 truly interdisciplinary team and working culture, offering unique skills development opportunities.
- A stimulating working-environment with friendly, highly motivated colleagues.
- Opportunities to develop and implement new ideas in a creative environment.
- Opportunities to learn programming skills and specialised knowledge from leading experts in the field.
- 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 recruitment@cares.cam.ac.uk.