Research Associate

Who are we?

We are the University of Cambridge research centre in Singapore called Cambridge CARES, sponsored by the NRF CREATE program CAM.CREATE. Health-driven design for cities (HD4) is a collaborative research programme between the University of Cambridge, NTU and NUS within Cambridge CARES.

HD4 sits at the heart of Singapore's global research and development hub and paves the way for a sustainable and healthy city. It will undertake research in the following key areas: characterising the features of the environment that potentially impact health in Singapore; understanding the links between environmental factors, individual behaviour and health outcomes; observing the impact of environmental change on health in Singapore; simulating the impact of potential changes on the health of Singaporeans; and working with government agencies to co-develop data-rich public health tools.

The scientific techniques, technologies, tools and most importantly the knowledge gained through the programme will create a comprehensive systems view of how the urban environment affects population health in Singapore. The programme will train and enrich the talent pool of next generation of researchers, and benefit from local and international expertise and an innovative interdisciplinary research ecosystem. It will provide the basis for a data-rich public health framework, supporting the development of a healthy Singapore.

Work Package 1, led by Assoc. Prof. Rudi STOUFFS (NUS) and Assoc. Prof. Ronita Bardhan (Cambridge), targets the identification and assembly of existing geocoded environmental datasets and linkage to individual behaviour and health outcomes. We will use existing data to analyse the built and natural environments in Singapore and construct profiles of urban environmental exposures at both population and individual levels. We will compile and map a set of environmental indicators and discover urban environmental exposure archetypes. These will be linked to the record of each study participant's individual behaviour and health outcome.

Who are we looking for?

A research associate to conduct the following work activities:
- Compute urban heat island (UHI) intensity to include the interaction of urban morphogenetics such as urban form, sky-view factor, and local temperature anomalies.
- Compute human biometeorology indices such as physiological equivalent temperature (PET) and universal thermal climate index (UTCI).
- Compute humid-heat stress by integrating spatially averaged ambient meteorological data.
- Assess the spatial distribution of heat health risks, identify the climate adaptation capacity of vulnerable groups and neighbourhoods.
- Evaluate the social impacts of climate change (e.g., temperature, heat stress) on human health and mobility behaviour.
- Compute a novel humid-heat index by using multi-modal data, combining geostatistical, AI, and urban physical modelling, apportioned to the chosen unit of analysis.
- Contribute to writing articles for publication in reputable journals.

What skills do you have?

- A Master's degree in urban planning or geography or a strongly related field from a reputable university.
- Experience in conducting research.
- Expertise in urban heat assessment, health risk and equality analysis, and strong geospatial analysis skills.
- Good command of GIS and geospatial modelling software (e.g., Python, R).
- Experience in multi-source data and multi-scale (regional, urban, neighbourhood) analysis, modeling, and planning.
- Preferably, experience in machine learning / AI and interdisciplinary research.
- Experience with writing and publishing articles in reputable scientific journals.

When is position available and for how long?

The position is available immediately initially as a fixed-term 1.5-year contract. The position will be offered subject to a probationary period of three months.

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 comprehensive medical insurance cover as part of your employment

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

How to apply?

Please apply by uploading your CV and academic transcript to https://jobs.swagapp.com/jobs/cambridge-cares-research-associate-ai-researcher-for-hd4-rr . If you have any questions, please feel free to reach out to the HR team at recruitment@cares.cam.ac.uk