Information on Postgraduate Research Scholarship
Ref: FS-ES-04-2027-6

Faculty:	Engineering & Science	**School:**	Engineering
Lead Supervisor:	Dr. Israa Kadhim		
Project Title:	Developing multi-scale remote sensing methods with neural networks for climate risk assessment in built environments		
Project Description:	Built environments need sustainable cooling, as they are increasingly vulnerable to global warming, yet little is known about assessing and predicting urban heat risk in buildings. Using open multispectral Light Detection and Ranging (LiDAR) and satellite data with deep learning models, this research will develop feasible and reproducible approaches for assessing and predicting urban heat risk in residential dwellings. The research objectives are as follows: 1. Develop a robust framework that fuses multispectral satellite and LiDAR data with neural networks models to assess urban heat risk (timeline: 12 months). 2. Create interactive data that highlights vulnerable buildings that are at risk of extreme heat (timeline: 6 months). 3. Investigate the effectiveness of fusion approaches to predict urban heat risk across scales (timeline: 6 months). 4. Illustrate a comprehensive validation of the developed approaches through intercomparison with reference data (timeline: 12 months). This research will develop and use deep learning models to understand the correlation between building attributes and heat conditions. These models will then be fused with open multispectral satellite and LiDAR data for building attribute analyses to predict urban heat risk and maintain heat resilience. Programming languages (e.g., RStudio) will be used to conduct and validate the analysis. To investigate the effectiveness and reproducibility of the developed approach, the fusion models will be applied across different scales. This step will generate significant shifts in critical comprehension of climate change in the environment built. The study is significant, as it will contribute to more heat resilient buildings by developing feasible approaches and providing evidence-based information to policymakers to priorities vulnerable buildings to extreme heat and assess potential adaptation strategies to climate change. This research brings together digital engineering, climate resilience, and deep learning. The outcomes from this research will make positive impacts on societies by providing a baseline for cities to make them sustainable and resilient to climate change; this aligns with the University of Greenwich Strategy 2030 and with the UN Sustainable Development Goals (SDG).		

	This scholarship is awarded competitively, and all applications are carefully reviewed. While we cannot guarantee an offer, we encourage strong candidates to apply.
Duration:	3 years, full-time study 6 years, part-time study

Support available (subject to satisfactory performance):

For Home students

- A full tuition fee waiver at the Home student rate for the duration of the scholarship.

For International students

- 50% tuition fee waiver against the International student rate for the duration of the scholarship.

Important information

- Tuition fees are subject to annual review and may increase during the course of study.
- This scholarship covers tuition fees only and does not include funding for living, accommodation, or maintenance costs.

Person Specification of Essential (E) or Desirable (D) requirements:

Criteria:	**E or D**
Education and Training:	
• 1st Class or 2nd class, First Division (Upper Second Class) honours degree or a taught master's degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project	**E**
• For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, if your programme falls within the faculty of Engineering and Science a language proficiency score of at least IELTS 6.5 overall with a minimum of 6.0 in all elements of the test or an equivalent UK VISA and Immigration secure English Language Test is required. Unless the degree above was taught in English **and** obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.	**E**
Experience & Skills:	
• Previous experience of undertaking research (e.g. undergraduate or taught master's dissertation)	**E**
• Proficiency in deep learning and programming languages (e.g., Python, RStudio, or MATLAB)	**E**
• Experience with heat-resilient buildings and/ or infrastructure	**D**
• Knowledge of remote sensing data sources (e.g., LiDAR and satellites)	**E**
• Familiarity with ENVI-met	**D**
Personal Attributes:	

• Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation	**E**
• Able to, under guidance, complete independent work successfully	**E**
Other Requirements:	
• This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA	**E**
• The scholarship must commence before 5th April 2027	**E**
Closing date for applications:	**Midnight UTC on 30th November 2026**
For further information contact:	**Dr. Israa Kadhim (i.j.kadhim@greenwich.ac.uk)**

Making an application:

Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. **No other form of application will be considered**.

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (FS-ES-04-2027-6)**– included in the personal statement section together with your personal statement as to why you are applying
- **a CV including 2 referees** *
- **academic qualification certificates/transcripts and IELTs/English Language certificate if you are an international applicant, if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency** *

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.