UNIVERSITY of GREENWICH

Information on Postgraduate Research Scholarship - Ref: Loukas-CMS-FES-01-25			
Faculty:	Engineering & Science	**Department:**	Centre for Sustainable Cyber Security
Lead Supervisor:	Prof. George Loukas		
Project Title:	Continuous spatial cyber threat monitoring for extended reality		
Project Description:	Extended reality (XR) is steadily developing into a reliable digital environment, bringing tangible advantages to various practical scenarios. Realistic use cases include immersive medical training, surgery planning with patient data for surgeons, real-time remote guidance for maintenance in industrial plants, and iterative design simulation for architecture and engineering. However, its wide adoption is still to materialise, with one of the key barriers being its cyber security and privacy concerns. These concerns include data security, user privacy, and the potential manipulation or tracking of users within mixed reality environments. Current research in XR security has predominantly concentrated on authentication procedures conducted at the beginning of a session, often in a static manner. This PhD project aims to advance the field by developing and utilizing novel technologies for continuous cyber threat monitoring throughout an XR session. With a focus on practical impact, this PhD will specifically investigate the cybersecurity benefits for frontline workers in manufacturing and healthcare contexts. It will also explore broader security and privacy implications for knowledge workers, addressing vulnerabilities such as manipulation of virtual movements, distortion of critical visual indicators, identity theft, and online safety threats. The work will also include active generation and collection of evidence of impact through communication activities, feature-limited software releases and efforts to inform policy. Candidates for this PhD should have a strong foundation in computer science, along with proven skills in prototyping software using real-time 3D engines and implementing machine learning models. If you have any questions, you can contact Prof. George Loukas, Email: g.loukas@greenwich.ac.uk Note that the University of Greenwich with its Centre for Sustainable Cyber Security (CS2) of 50+ researchers and PhD students has been recently recognised by the UK government's National Cyber Security Centre as an Academic Centre of Excellence in Cyber Security Research. The successful candidate will have the opportunity to work in a vibrant research environment in CS2, as well as to collaborate on the impact activities of our XR cyber security work.		
Duration:	3 years, Full-Time Study		

September 2021

Bursary available (subject to satisfactory performance):
Year 1: £19,237 (FT) or pro-rata (PT)
Year 2: In line with UKRI rate
Year 3: In line with UKRI rate

In addition, the successful candidate will receive a contribution to tuition fees equivalent to the university's Home rate, currently £4,786 (FT) or pro-rata (PT), for the duration of their scholarship. International applicants will need to pay the remainder tuition fee for the duration of their scholarship.

This fee is subject to an annual increase.

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

Criteria:	**E or D**
Education and Training:	
• 2.1 (UK or UK equivalent) in extended reality, artificial intelligence or related areas, or a Master's degree with 60% overall in a relevant discipline.	**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**
• Excellent software development skills	**E**
• Experience in extended reality	**D**
• Demonstrable interest in cyber security or extended reality	**D**
• Excellent organisational and IT communication skills	**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**
• Excellent time and project management skills	**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 by **01 December *2025***	**E**

Closing date for applications:	***midnight UTC on 08 June 2025***

For further information contact:	Prof. George Loukas, Email: g.loukas@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 (Loukas-CMS-FES-01-25)**– included in the personal statement section together with your personal statement as to why you are applying. The REF is " Loukas-CMS-FES-01-25"
- **CV***
- **Academic qualification certificates/transcripts and IELTs/English Language certificate -** if you are an international applicant or 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 *
- **Personal Statement -** outlining your motivation for applying for this PhD, and your previous research experience (e.g., as a research assistant or completing a dissertation).
- **Research Proposal** (ca. 2000 words) – A literature review on XR cybersecurity and AI and your ideas on how this project can be conducted.
- **Examples of relevant software** prototypes or code repositories (e.g., GitHub) demonstrating experience with real-time 3D engines, cybersecurity applications, or machine learning implementations.

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