Information on Postgraduate Research Scholarship
Ref: FS-ES-04-2027-21

Faculty:	Engineering & Science	**School:**	Engineering
Lead Supervisor:	Dr Georgios Mantas		
Project Title:	AI-Based Risk-Adaptive Authorisation for IIoT Systems: Integrating Device Authentication Assurance, Operational Context & Organisational Risk Policies		
Project Description:	This PhD will develop AI-based risk-adaptive authorisation for Industrial Internet of Things (IIoT) systems. It will investigate how device permissions should adapt to authentication assurance, operational conditions and organisational risk policies, balancing protection against unauthorised operations with legitimate service availability. The research will develop a model linking the strength, freshness and uncertainty of device authentication evidence with operational risk; an AI algorithm that adjusts permission scope and duration while respecting mandatory restrictions; and a mechanism for renewing, restricting and revoking permissions as conditions change. Authentication evidence will inform access decisions without requiring a new authentication protocol. The methodology combines literature review, threat modelling, algorithm development and reproducible software experiments. Public industrial datasets will supply operational traces, supplemented by documented authentication and access-request scenarios. Independently specified policies will provide reference decisions. A software-only prototype with emulated devices and a process simulator will enable evaluation without specialist IIoT hardware. The approach will be compared with static attribute-based access control, risk-threshold methods and relevant published adaptive approaches. Experiments will examine manipulated or stale evidence, compromised authenticated devices, communication failures and changing operational conditions. Evaluation will measure unauthorised operations, legitimate requests incorrectly denied, policy violations, revocation delay, simulated service disruption and processing overhead. Tests on unseen scenarios, repeated experiments and analysis of individual information sources will assess robustness and generalisation. The project will connect technical access control with cybersecurity management by translating organisational risk requirements into enforceable device permissions. Expected outputs include models, algorithms, a software prototype and a reproducible evaluation framework, supporting publications and subsequent industrial validation. **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**
• Programming skills in Python and knowledge of cybersecurity, computer networks and IoT systems.	**E**
• Experience with machine learning, access control, experimental data analysis, and software simulation and emulation.	**E**
• Strong analytical and problem-solving skills, with evidence of being able to work independently.	**E**
• Very good written and spoken English, with demonstrated ability to write technical documents or publications and present results clearly to technical audiences.	**E**
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 Georgios Mantas (G.Mantas@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-04-2027-21)**– 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.