

<u>Information on Postgraduate Research Scholarship - Ref: VCS-FES-10-22</u>			
Faculty:	Engineering and Science	School:	Computing & Mathematical Sciences
Lead Supervisor:	Dr Sadiq Sani		
Project Title:	Safsect: Autonomous Safety and Security Validation System for Internet of Things Applications		
Project Description:	<p>Internet of Things (IoT) applications are still unable to evaluate and automatically detect whether an IoT environment is safe and secure due to limited integrated safety and security capabilities and the diversity of devices in the environment. Existing solutions for validating the safety and security of an IoT environment have at least one of the following limitations: (A) Analyses lead to false positives due to an increase in the size of the environment. (B) Analyses focus on static permissions and configurations of the environment, and hence some of the findings do not apply to the changes in the environment.</p> <p>This project aims at designing and deploying “Safsect”, an autonomous safety and security validation system for independently analysing and validating whether an IoT environment adheres to safety and security properties, and further revealing how the properties are violated. In Safsect, we will utilise string and frequency analyses to identify the key values required for analyses and design a blockchain ledger to store the values and support scalability in the environment. Furthermore, we will also utilise lightweight cryptographic algorithms to establish a set of transactions for accommodating new permissions and configurations and design self-triggering consensus mechanisms for applying changes to the environment.</p>		
Duration:	3 years, Full-Time Study or 6 years, Part-Time Study		
Bursary available (subject to satisfactory performance):			
Year 1: £17,668 (FT) plus London Weighting where applicable 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 £4,596 (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:			
<ul style="list-style-type: none"> 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 			E

assessment (UK or UK equivalent) in a relevant area to the proposed research project	
<ul style="list-style-type: none"> 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:	
<ul style="list-style-type: none"> Previous experience of undertaking research (e.g. undergraduate or taught master's dissertation) 	E
<ul style="list-style-type: none"> Proficiency in cryptography, blockchains, smart contracts, and Web 3.0 	E
<ul style="list-style-type: none"> Previous experience of model checking and evaluating Internet of Things (IoT) applications and source codes 	E
<ul style="list-style-type: none"> Familiar with safety and security violations in IoT environments 	E
<ul style="list-style-type: none"> Coding/scripting experience in general-purpose languages with strong analytical abilities and knowledge of data structures 	D
Personal Attributes:	
<ul style="list-style-type: none"> Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation 	E
<ul style="list-style-type: none"> Able to, under guidance, complete independent work successfully 	E
Other Requirements:	
<ul style="list-style-type: none"> This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA 	E
<ul style="list-style-type: none"> The scholarship must commence before 01 July 2023 	E
Closing date for applications:	midnight UTC on 1 March 2023
For further information contact:	Dr Sadiq Sani (s.sani@greenwich.ac.uk)
<p>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.</p> <p>All applications must include the following information. Applications not containing these documents will not be considered.</p> <ul style="list-style-type: none"> Scholarship Reference Number (Ref VCS-FES-10-22)– 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 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 * <p><i>*upload to the qualification section of the application form. Attachments must be a PDF format.</i></p>	

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