Information on Postgraduate Research Scholarship - Ref: Eng-PhD-17-25			
Faculty:	Engineering and Science	**Department:**	School of Engineering
Lead Supervisor:	Dr Georgios Mantas		
Project Title:	**AI-empowered Anomaly Detection for Generative AI Clinical Agents in Diagnostic Imaging**		
Project Description: (maximum 500 words)	Generative AI is rapidly reshaping diagnostic imaging, powering clinical agents that enhance MRI (Magnetic Resonance Imaging) and CT (Computed Tomography) images, assist in abnormality detection, and support automated reporting. These systems promise faster workflows and more consistent diagnoses, but they also introduce a new layer of risk: subtle AI failures or targeted cyberattacks can alter images or outputs in ways that are difficult for clinicians to notice. The motivation for this PhD project is to ensure that such AI-enabled diagnostic workflows remain accurate, trustworthy, and safe for patients by adding a dedicated anomaly detection layer focused on both clinical reliability and security. The scope of the research is threefold. First, it will systematically analyse vulnerabilities and failure modes of generative AI clinical agents in diagnostic imaging, covering both clinical and cybersecurity perspectives. Second, it will design and implement an interpretable, real-time anomaly detection system that monitors imaging data and agent behaviour across MRI, CT, and related modalities, using both synthetic and real datasets. Third, it will conduct comprehensive benchmarking and stress-testing under realistic clinical and attack scenarios to quantify performance, robustness, and clinical relevance. By staying focused on these aspects, the PhD research aims to deliver not only a working prototype but also conceptual and practical guidelines for deploying safer, regulation-ready generative AI agents in diagnostic imaging. Within this context, the PhD project offers an exceptional opportunity for the selected candidate to lead original research at the intersection of medical imaging, AI, and cybersecurity. The successful PhD researcher will be expected to contribute novel methods, conduct rigorous experimentation, and publish in high-impact venues, ultimately producing a thesis that advances the state of the art in safe and secure clinical AI. The project is structured to support the candidate in building a strong international profile while developing both deep technical expertise and a clear understanding of clinical and regulatory requirements for AI in healthcare. 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 or 6 years, Part-Time Study

Support available (subject to satisfactory performance):

A successful Home candidate will receive:

- A Full tuition fee waiver at the university Home-student rate for the specified duration of the scholarship

A successful International candidate will receive:

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

Tuition fees are subject to annual increases.

This scholarship does not include funding for living expenses.

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**
• Strong background in machine learning/deep learning, ideally from computer science, electrical/computer engineering, biomedical engineering, or a related quantitative field.	**E**
• Good understanding of medical imaging concepts (e.g., MRI, CT, DICOM, basic radiology terminology) or clear motivation to specialise in this area.	**E**
• Familiarity with fundamental concepts in cybersecurity, such as threats, vulnerabilities, attack surfaces, and basic threat modelling, especially in healthcare or cyber-physical systems.	**E**
• Solid programming skills in Python and experience with ML frameworks such as PyTorch or TensorFlow.	**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 15th July 2026 (offers will be withdrawn if this condition is not met)	**E**
Closing date for applications:	***midnight UTC on 20th February 2026***
For further information contact:	***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 (*insert reference*)**– 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** *

**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.