



TUS

**Technological University of the Shannon:
Midlands Midwest**
Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir

POSTGRADUATE RESEARCH OPPORTUNITY

Project Title: Explainable artificial intelligence

Project Description: This research project is focused on the area of artificial intelligence and the underlying mathematics behind it. Artificial intelligence is an area of computer science that is undergoing explosive growth and expected to continue in the coming years. This is easily shown by the public awareness of AI systems such as 'ChatGPT' and 'Dalhi'. Artificial intelligence is already used in industrial contexts and in the coming years is fully expected to be part of every job. This could range from autonomous rental car fleets to the replacement of human interactions when dealing with company call centres. While we may not like every aspect of this future, it is imperative that we understand how to harness it for the betterment of society. We see an exciting opportunity for the beginning postgraduate in this field. They have the chance to learn the necessary skills to advance them in this sector and advance the research goals of TUS as a whole. We view the project being two-fold; one side will train the postgraduate in the core skills needed to understand deep neural networks, i.e. the mathematics, while the other side will focus on the use cases and how these skills can be harnessed in current models.

Duration of Project: 24/48 months

Funding Agency: TUS Presidents Doctoral Scholarship

Type of Degree Offered: MSc

Minimum Qualifications/Experience Necessary/Any Other Requirements:

- Undergraduate degree that involved computer science and mathematics, statistics.
- Working knowledge of Linear algebra, vector spaces and eigen vectors with a aptitude to explore this area more fully.
- Knowledge in computer programming, python, C++ or similar

Candidates with primary degrees in Computer science: Electronic engineering or related fields.
Minimum classification of *2.1 honours or equivalent: (2:1) Upper second-class honours*.
IELTS [International English Testing System] Applicants must have a minimum of 6.0 with no component score less than 6.0.

Research Supervisors:

Dr Patrick Browne (TUS Moylish), Dr Mary Giblin (TUS Athlone)

For further information, please contact:
patrick.browne@tus.ie

Download Application Form at
[Funded Postgraduate Research Opportunities - TUS](#)



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Closing date for receipt of completed application forms is **5pm 18th December 2023**

Please submit your completed application: pro@tus.ie

Please reference **Project Title** in all correspondence