School of Computing, Engineering, and the Built Environment
Edinburgh Napier University

PHD STUDENT PROJECT

Funding and application details

Funding status: Self-funded students only

Application instructions:
Detailed instructions are available at https://www.napier.ac.uk/research-and-innovation/research-degrees/how-to-apply

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:

- DIRECTOR OF STUDY: Dr Dimitra Gkatzia (Email: D.Gkatzia@napier.ac.uk)
- 2ND SUPERVISOR:

Subject Group: Computer science

Research Areas: Computer Science, Artificial Intelligence

Project Title: Natural Language Generation in the Era of Large Language Models

Project description:

Large Language Models (LLMs) have demonstrated incredible capabilities in several tasks, including Natural Language Generation (NLG) and Dialogue Systems. Despite their remarkable performance in NLG and dialogue systems, these models are susceptible to certain limitations such as misinterpreting instructions, generating biased text, or hallucinating (i.e. generating fake) information. Therefore, aligning LLMs with human expectations is paramount for making these models usable in real-world applications.

This project aims to explore approaches to aligning and evaluating LLMs for NLG and dialogue tasks. The proposed research aims to shed light on the alignment of

LLMs in NLG and dialogue scenarios by initially looking at the best approaches to instruct LLMs (e.g. through self-instruction, human written instructions, LLM-based instructions, multi-turn instruction for dialogue) and identify tasks where instructions do not produce the desired outcomes, which might call for fine-tuning of the models. The project will also look into the evaluation of the instructions with regard to model performance.

References:

Candidate characteristics

Education:

A second class honour degree or equivalent qualification in Computer Science, Artificial Intelligence, Software Engineering, Computational Linguistics, or Computational Cognitive Science

Subject knowledge:

- Machine Learning
- Natural Language Processing

Essential attributes:

- Strong Programming Skills
- Previous experience in natural language processing

Desirable attributes: