



Research Centre

ADAPT Centre

Post title

Research Fellow in Applied Natural Language Processing - Cilter

Level on Framework

Level 2

Post Duration

Fixed Term Contract Up To 18 months

Dublin City University

Dublin City University (DCU) is a leading innovative European University. It is proud to be one of the world's leading Young Universities and is among the world's top 2% globally. DCU is known as Ireland's University of Impact, with a mission to 'transform lives and societies' and focuses on addressing global challenges in collaboration with key national and international partners and stakeholders.

DCU has over 20,000 students in five faculties spread across three academic campuses in the Glasnevin-Drumcondra area of North Dublin. Thanks to its innovative approach to teaching and learning, the University offers a 'transformative student experience' that helps to develop highly sought-after graduates. DCU is currently No. 1 in Ireland for Graduate Employment Rate, and for graduate income (CSO).

DCU is a research-intensive University and is home to a number of SFI-funded Research Centres. The University participates in a range of European and international research partnerships. DCU is also the leading Irish university in the area of technology transfer as reflected by licensing of intellectual property.

As a 'People First' institution, DCU is committed to Equality, Diversity and Inclusion - a University that helps staff and students to thrive. The University is a leader in terms of its work to increase access to education and is placed in the world's Top 10 for reducing inequalities in the Times Higher Education Impact Rankings.

Overview of the Department

ADAPT is the world leading SFI research centre for AI Driven Digital Content Technology hosted by Trinity College Dublin. ADAPT's partner institutions include Dublin City University, University College Dublin, Technological University Dublin, Maynooth University, Munster Technological University, Athlone Institute of Technology, and the National University of Ireland Galway. ADAPT's research

vision is to pioneer new forms of proactive, scalable, and integrated AI-driven Digital Content Technology that empower individuals and society to engage in digital experiences with control, inclusion, and accountability with the long-term goal of a balanced digital society by 2030. ADAPT is pioneering new Human Centric AI techniques and technologies including personalisation, natural language processing, data analytics, intelligent machine translation human-computer interaction, as well as setting the standards for data governance, privacy and ethics for digital content.

Since launching, ADAPT's researchers have signed 43 collaborative research projects, 52 licence agreements and oversee 16 active commercialisation funds and 52 commercialisation awards. ADAPT has won 40 competitive EU research projects and obtained €18.5 million in non-exchequer non-commercial funding. Additionally, six spinout companies have been formed. ADAPT's researchers have produced over 1,500 journal and conference publications. Nearly 100 PhD students have been trained.

ADAPT's breakthrough technologies and research applications AI for Media Interaction, Digital Humanities, Health, Data governance, and Fintech are being applied across multiple industry domains, expertly facilitated through the ADAPT Design and Innovation Lab (dLab) to deliver product and service innovation. ADAPT's Start-up & Development team fosters and steers collaborations between researchers and AI entrepreneurs from start-up to successful spinout.

Role Profile

We are looking for an experienced research fellow (more than 5 years of postdoctoral research experience) to conduct research into the application of neural Natural Language Processing (NLP) algorithms for the detection of harmful online content in the Cilter project. Cilter is a parental control software modification at the kernel level that allows that operates across the domains: cyberbullying, self-harm, suicide-related and grooming content detection on all apps on the child's phone (from WhatsApp to other various messaging apps). Cilter technology development is funded by the Disruptive Technologies Innovation Fund (DTIF) Ireland and it is a partnership between Cilter (SME), DCU Anti-Bullying Centre (ABC) and ADAPT Science Foundation Ireland and Amarach research. The research fellow will work with the ADAPT PI in leading a team of NLP researchers who will work closely with ABC postdoctoral researchers who are working across the three domains of detection of harmful online content; in order to ensure the timely provision of deliverables related to the development of NLP algorithms for online safety for subsequent embedding in Cilter Technology.

Principal Duties and Responsibilities

The successful candidate will:

- Oversee the domain analysis and gather linguistic/classification requirements for the above online safety domains.
- Design, develop, deploy, evaluate efficient NLP methodologies and software solutions for the detection of harmful content on resource constrained devices with the support of the research team.
- Manage the ADAPT members of the DTIF research team and supervise both postdoctoral and junior research staff.

- Document all work to ensure code and processes are easily understood by peers and can be maintained beyond the project's lifetime.
- Plan and execute the dissemination of project research output via high impact computational linguistics/ NLP publications venues such as ACL, COLING, LREC, NAACL,

Qualifications, Skills and Experience Required

Applicants must have a PhD in Natural Language Processing. A minimum of 5 years relevant postdoctoral research experience or equivalent to Level 2 of the Research Career Framework and minimum 5 years of postdoctoral research experience in developing NLP applications both in a research and industry context.

The candidate will also have:

- Excellent programming skills for developing neural NLP applications i.e. Python.
- In depth algorithmic knowledge of state of the art pretrained language model (PLMs) Transformers such as BERT, GPT, i.e. (fine tuning, zero-shot, few shot), prompt/instruct based PLMs.
- Evidence of high-quality publications in top ranked journals/conferences in the relevant fields or other significant publication outputs i.e. ACL, NAACL, COLING, LREC.
- Evidence of significant research dissemination experience (including organisational roles in conferences in the field).
- Evidence of previous engagement with interdisciplinary teams.
- A good track record of research supervision of junior research staff and postgraduate research supervisors.
- Excellent research project management skills.

Desirable Criteria

- Evidence of and/or capacity to develop research proposal and generate research income at the national (EI, SFI) or European levels (Horizon Europe).
- Evidence of successful commercialization of NLP research outputs.
- Experience in curation and collection of data for under-resourced domain/languages.
- Experience working with light Transformers for resource-limited devices i.e. MobileBERT, TinyBERT

Discipline knowledge and Research skills – Demonstrates the ability to design and implement part of a programme of research (for example by using critical thinking and the application of relevant research methodologies).

Understanding the Research Environment – Demonstrates a thorough understanding of the research environment both nationally and internationally and the ability to contribute substantially to grant applications.

Communicating Research – Demonstrates the ability to communicate their research effectively to the research community and wider society (for example by publishing their research in high quality peer reviewed journals) and the ability to teach and tutor students.

Managing & Leadership skills - Successfully manages research projects including the management and supervision of postgraduates and/or junior research staff.

Research Career Framework

As part of this role the researcher will be required to participate in the DCU Research Career Framework. This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

Essential Training

The postholder will be required to undertake the following essential compliance training: Orientation, Health & Safety, Data Protection (GDPR) and all Cyber Security Awareness Training.

They will also be expected to engage with DCU/ADAPT training on Gender, Equality, Diversity and Inclusion. Other training may need to be undertaken when required.

Dublin City University is an equal opportunities employer.

In line with the Employment Equality Acts 1998 – 2015, the University is committed to equality of treatment for all those who engage with its recruitment, selection and appointment processes.

The University's Athena SWAN Bronze Award signifies the University's commitment to promoting gender equality and addressing any gender pay gaps. Information on a range of university policies aimed at creating a supportive and flexible work environment are available in the [DCU Policy Starter Packs](#)