

**Title:** Senior Researcher in Natural Language Processing and Federated Learning

**Department:** Computer Science – ADAPT Research Group

**Contract Type:** 12 Month Fixed Term, Whole Time Contract

**Location:** Bishopstown Campus, Cork

**Reporting to:** Dr Haithem Afli

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## Overview of the ADAPT Research Group

ADAPT is a pioneering research group, coordinated by Trinity College Dublin and involving several top-tier academic institutions across Ireland, including MTU. The centre is dedicated to developing advanced AI-driven digital content technologies that emphasise personalisation, privacy, ethics, and inclusivity, aiming to create a balanced digital society by 2030.

Munster Technological University (MTU), in collaboration with the ADAPT Centre, invites applications for a Senior Researcher position specialising in Natural Language Processing (NLP) and Federated Learning. This opportunity is situated in Cork, Ireland's vibrant and culturally rich second-largest city, offering an exceptional environment for students and researchers alike. The successful candidate will have the chance to work on cutting-edge research in a world-leading SFI research centre for AI-Driven Digital Content Technology.

## Duties of the Post:

The Researcher will:

- Design and implement federated learning systems that facilitate collaborative yet private model training across distributed data sources, maintaining user confidentiality.
  - Construct new frameworks for the evaluation of model performance in NLP tasks, particularly in the context of federated learning environments.
  - Lead the analysis and visualisation of complex datasets, interpreting results to gain insights into language patterns and model efficacy.
  - Actively participate in the dissemination of research findings through high-impact academic journals, conferences, and seminars.
  - Collaborate closely with the Principal Investigator to participate in project calls, meetings, and presentations, both within Ireland and internationally.
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- Assist in the preparation of project deliverables, reports, and documentation, ensuring adherence to project timelines and goals.
- Contribute to the supervision of postgraduate students' research activities, providing mentorship and supporting their academic development.
- Pursue relevant training and professional development opportunities to remain at the forefront of NLP and federated learning research fields.
- Perform necessary administrative tasks related to the research programme, including data management, ethics submissions, and progress reporting.

The appointee shall carry out the lawful instructions of the President (or authorised Officer) and comply with the requirements and regulations of the Minister for Further and Higher Education, Research, Innovation and Science.

## Qualification Requirements and Selection Criteria for role:

### Essential Qualifications

- The ideal candidate will possess a PhD, or be near the completion of their PhD, in a relevant field of Machine Learning and Natural Language Processing, ensuring a deep understanding of the theoretical and practical aspects of these disciplines
- Candidates with significant industrial experience in Artificial Intelligence, marked by a minimum of 2 years in roles directly linked to AI innovation and development, will also be considered. This experience should demonstrate a tangible impact on the field and compensate for the absence of a PhD qualification.
- Those close to completing a Master's degree in Artificial Intelligence may be considered, especially if they have engaged in substantial projects or research pertinent to federated learning or ethical aspects of AI.
- Experience in designing and conducting experiments on high-performance computing clusters, showcasing technical proficiency and an ability to manage complex computational tasks.

### Desirable Qualifications

- A strong publication record in international peer-reviewed publications and presentations at top-tier conferences and journals, reflecting an active and successful research career.
- Excellent written and verbal communication and interpersonal skills, with the ability to convey complex technical information clearly and collaborate effectively with various stakeholders.
- An established record of providing supervision and support to students at the postgraduate level, demonstrating a capacity for mentorship and academic leadership.

**NOTE:** In addition to the minimum qualifications, it may be necessary to introduce further shortlisting criteria. Therefore, candidates may be shortlisted on the basis of qualifications and suitable experience based on details given in the application. Candidates should note that they may be called for more than one interview. Upon completion of interview, a panel will be formed from appointable candidates.

#### Other attributes:

- Good communication and interpersonal skills
- Evidence of ability to work on own initiative as well as part of a team
- Ability and willingness to work in a collaborative environment

### Remuneration, Benefits and Facilities:

#### Salary scale effective 1 January 2024:

Remuneration will be on the Senior Researcher Salary scale (€48,660 - €60,047) per annum in line with relevant experience

The rate of remuneration for all appointments may be adjusted from time to time with government policy.

#### Additional Benefits:

- Comprehensive Sick Leave Policy
- Paid maternity leave
- Employment Assistance Programme
- Staff Discount Scheme
- Gym Access (reduced membership cost)

#### On site Facilities:

- On site Car Parking
- On site dining facilities
- On site TFI Bike Sharing Station

#### **Interview & Additional Information:**

##### Interview Process:

If invited to interview, candidates are likely to be assessed at the interview under the following criteria. Additional criteria may be added for the interview as the need arises.

- Qualifications (Academic & Professional)
- Relevant Industry/Professional Experience
- Teaching & Learning Experience
- Communications & Interpersonal Skills
- Research Knowledge and Experience
- Team Working and Organisational Skills

Shortlisted candidates will be invited to attend for interview

##### Additional Information:

A successful candidate will be required to submit a passport, documentary evidence confirming academic qualifications, and to undergo a medical examination. Garda vetting and/or an international police clearance may also be required. References will be sought in relation to successful candidate.

MTU welcomes applications from non-EEA citizens. However, employee permit regulations set by the Department of Enterprise, Trade & Employment must be strictly adhered to. Any appointment offer to Non-EEA candidates is subject to the granting of a Hosting Agreement by the Euraxess Ireland or relevant Immigration permissions/stamp.

Candidates may be required to produce documentary evidence to support any statements made by them on their application form or any supporting documentation.

Candidates should note that any inaccurate information will invalidate their application.

#### **Application Process:**

Applications by MTU eRecruitment system only. Applications will not be accepted in any other format or through any other channel of communication. Please log on to [www.mtu.ie/vacancies](http://www.mtu.ie/vacancies) to apply for this position.

**Closing date for receipt of completed applications is  
1.00 pm on 3 May 2024.**

The information given in this document is of a general information nature only and should not be taken as contractual.

***MTU is an equal opportunities employer.***

**Important Notes:**

- Screening and short-listing only takes place on the basis of information submitted on the application. In addition to the minimum criteria, it may be necessary to introduce further shortlisting criteria. Candidates should note that they may be called for more than one interview.
- Please ensure that full information is given on qualifications and that the information is accurate and corresponds to the original transcript of qualifications.
- Please ensure that those you nominate as referees are contacted by you and will be able to supply a reference without delay if requested.
- The University regrets that it cannot pay expenses for candidates attending interviews for this post or for taking up the position, if appointed.
- Applications received after the closing date will not be accepted.
- Appointments will be subject to Garda vetting.