

**Post Title: PhD Studentship in Conversational Proactive Information Retrieval (PhD\_IR\_GJ)**

**Anticipated Start Date:** September/October 2021

**Location:** Dublin City University

**Stipend:** €18,500 per annum (non taxed) plus university fees\*

**Closing Date:** 31<sup>st</sup> July 2021

**Apply:** <https://forms.gle/df3ju6pnzrs47CZg7>

### Studentship Focus

Information retrieval technologies are a ubiquitous part of many people's daily lives in the form of online search engines. Proactive information retrieval is an emerging area of research in which search systems are empowered to act autonomously to anticipate the information needs of a user or seek opportunities to provide the user with potentially useful information of which they may be unaware. This poses challenges of interpreting the user's current activities and its relationship to the existing knowledge of the user. Conversational information retrieval aims to ease user engagement in a search engine by supporting them in identifying relevant information.

This project will focus on examining the use of conversational agents to enable the user to engage with the proactive information retrieval to identify useful suggested information, enable the proactive system to explain the reasons for its recommendations and for the user to provide feedback.

On completion of this PhD project, the student will have a strong knowledge of the state-of-the-art in established and emerging topics in information retrieval, including models of information seeking and information retrieval, development of experimental prototype systems and related evaluation strategies. The student will be expected to seek publication of their work at leading international venues and engage with international research benchmarks in information retrieval.

### Why ADAPT?

- **Contribute** to the ADAPT research agenda that pioneers and combines research in AI driven technologies: Natural Language Processing, Video/Text/Image/Speech processing, digital engagement & HCI, semantic modeling, personalisation, privacy & data governance.
- **Work** with our interdisciplinary team of leading experts from the complementary fields of, Social Sciences, Communications, Commerce/Fintech, Ethics, Law, Health, Environment and Sustainability.
- **Leverage our success.** 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 and nearly 100 PhD students have been trained.

**As an ADAPT funded PhD researcher you will have** access to a network of 85 global experts and over 250 staff as well as a wide multi-disciplinary ecosystem across 8 leading Irish universities. We can influence and inform your work, share our networks and collaborate with you to increase your impact, and accelerate your career opportunities. Specifically we offer:

1. Opportunity to build your profile at international conferences and global events.
2. A solid career pathway through formalised training & development, expert one-on-one supervision and exposure to top specialists.
3. A Fully funded, 4 year PhD postgraduate studentship which includes a stipend of (€18,500 per annum - non taxed), along with equipment, annual travel funding
4. Funding for annual student fees

### Minimum qualifications

Applicants should have a strong undergraduate (2.1 or above) or Masters degree in Computer Science, Computer Engineering or related degree.

To register for a Postgraduate Research programme, a candidate must normally have obtained a primary degree classification equivalent to Lower Second Class Honours or above, from an approved University or an approved equivalent degree-awarding body, or have an approved equivalent professional qualification in an area cognate to the proposed research topic. See <http://www.dcu.ie/registry/postgraduate/faq.shtml#q3>

English language requirements for non-native speakers of English is available here: <https://www.dcu.ie/registry/english.shtml>

### Preferred qualifications

Candidates should be able to code in python, Java or an equivalent modern programming language.

- Strong design and programming skills.
- Problem-solving skills
- Experience of the research process (at least an undergraduate level)
- Excellent communication, teamwork and organizational skills.
- Must be eager to work in and learn from a multi-disciplinary multi-organisation team

### Advantageous experience

- Knowledge of Information Retrieval, Conversational Systems, Development of Interactive Systems

**Informal enquiries** about this position can be made via email to Prof Gareth Jones

(gareth.jones@dcu.ie) referencing 'PhD\_IR\_GJ' in the subject line.

### **Application Process**

Each application should only consist of

1. Detailed curriculum vitae, including – if applicable – relevant publications;
2. Transcripts of degrees,
3. The name and email contacts of two academic referees,
4. A cover letter/letter of introduction (max 2000 words). In the letter, applicants should include the following details:
  - a. An explanation of your interest in the research to be conducted and why you believe they are suitable for the position.
  - b. Why you wish to study for a PhD and why this is important to your future career.
  - c. Details of your final year undergraduate project (if applicable)
  - d. Details of your MSc project (if applicable)
  - e. Details of any relevant modules previously taken, at undergraduate and/or Master level.
  - f. Details of any relevant work experience (if applicable).

### **Diversity**

ADAPT is committed to achieving better diversity and gender representation at all levels of the organisation, across leadership, academic, operations, research staff and studentship levels. ADAPT is committed to the continued development of employment policies, procedures and practices that promote gender equality. On that basis we encourage and welcome talented people from all backgrounds to join ADAPT.

### **About the ADAPT Centre**

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.

### **Our Research Vision**

Governments and civil society are starting to recognise the need for urgent and concerted action to address the societal impact of the accelerating pace of digital content technologies and the AI

techniques that underpin them. ADAPT provides an ambitious, ground-breaking, integrated research programme that assembles three interlocking Strands that together are capable of addressing this challenge. Each of these complementary and reinforcing research Strands takes one of the different perspectives on the provision of personalised, immersive, multimodal digital engagement, i.e. the individual's experience and control of the engagement, the algorithms underlying digital content processing, and the balanced governance by enterprise and societal stakeholders.

### **Digitally Enhanced Engagement Strand**

From the individual perspective, research within this Strand will deliver proactive agency techniques that sense, understand and proactively serve the needs of individual users to deliver relevant, contextualised and immersive multimodal experiences which also offer them meaningful control over the machine agency delivering those experiences.

### **Digital Content Transformation Strand**

From the algorithmic perspective, new machine learning techniques will both enable more users to engage meaningfully with the increasing volumes of content globally in a more measurably effective manner, while ensuring the widest linguistic and cultural inclusion. It will enhance effective, robust integrated machine learning algorithms needed to provide multimodal content experiences with new levels of accuracy, multilingualism and explainability.

### **Transparent Digital Governance Strand**

From the enterprise and societal perspective, new structured knowledge frameworks and associated practices for AI data governance will be required to balance the needs and values of individuals, organisations and society when it comes to rich digital experiences. This requires the advancement of research in the areas of data ethics, data quality, data protection, data value, data integration, and multi-stakeholder governance models.