

Post Title: PhD Studentship in VR, Audio, Animation, Interactions

Location: [TU Dublin](#)

Closing Date: 8 December 2022

Apply: <https://forms.gle/dFSfD17Fkg4tAGSH7>

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 the opportunity to collaborate with 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

Context

Virtual characters have been central components to digital applications such as movies and games for many years. More recently, interaction with these characters has provided increased engagement and opportunities for immersion for players in a social context. Today, Augmented and Virtual Reality applications provide a space for embodied interaction; players/users can be represented by a virtual avatar, and exchanges become more engaging. There is general agreement that plausible avatars play a key role in creating VR environments that allow the user to feel high levels of immersion and social presence. However, the requirements of real-time dynamic interactions pose a serious challenge for developers; trying to capture and relay detailed (rich) and reasonably accurate information about one user and their environment to other remote users and vice versa presents a number of complications. Particularly challenging are scenarios where precise movement/interactions are required e.g., communication gestures where turn taking and gesture synchronization is desired, or physical interactions for example playing sport or throwing an object between players.

Under the supervision of [Dr Cathy Ennis](#) & [Prof John Diliginana](#), you will aim to contribute to the work on virtual embodiment of multiple users in multi-modal AR/VR scenarios (considering audio as a factor), determining how to do this efficiently, with affordable devices in real-time. You will learn a number of key skills in Augmented and Virtual Reality environment development, working with motion capture and combining multi-sensory signals in a number of different scenarios. In addition you will also conduct perceptual experiments to guide this development, enhancing your skills in that domain.

This project is multidisciplinary in nature, and there will be potential for collaboration with experts in other areas of academia. The application of results from this project will be of interest to industry partners also including social media and game developers.

Information inquiries can be sent to: cathy.ennis@adaptcentre.ie

Minimum qualifications:

- 2.1 Primary Degree in computer science or equivalent in aligned field
- English language requirements for non-native speakers of English is available here: <https://www.tudublin.ie/study/international-students/entry-requirements/english-language-requirements/>

Preferred qualifications:

- Any AR/VR, Animation development experience

Application Process

As part of your application you will be required to submit

- A letter of introduction (max 3000 words). In the letter, applicants should include the following details:
 - A an explanation of your interest in this research, highlighting any experience you have with development of games or AR/VR environments, or any other relevant experience e.g., working with animation or audio
 - Details of your final year undergraduate project (if applicable)
 - Details of your MSc project (if applicable)
 - Details of any relevant modules previously taken, at undergraduate and/or Master level.
 - Details of any relevant work experience (if applicable)
- Detailed CV, including – if applicable – relevant publications;
- Transcripts of degrees

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.