Post Title: PhD Studentship in Data Value for Trustworthy AI
Location: University of Galway
Anticipated start date: April 2023
Closing Date: Feb 16th, 2023
Apply: https://forms.gle/ikN3Gh1Y2NPJeXV6A

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 fees

Research Topic

Data is commonly viewed as a valuable asset by several companies, leading researchers and practitioners to widely recognize the imperative for achieving and maintaining a high standard of data quality and value.
Several models and techniques have been proposed over the years to assess the value of data from various dimensions. However, none of these models consider dimensions that capture the toxicity of the data, its bias, or other ethical concerns.

As a large number of businesses/services regularly use AI/ML techniques to automate their decision-making processes, and due to the lack of assessment techniques that identify data toxicity and its proneness to yield biased and unethical AI/ML techniques, companies often leverage a posteriori AI Trustworthiness and Ethics assessment frameworks.

The aim of this project is to devise a framework for the assessment of data value that factors bias, ethical, and toxicity considerations prior to making the decision on using it to generate automated decision-making techniques. This research will be aligned with the EU guidelines and help promote trustworthy AI.

The successful candidate will work within a large group of Academics, Postdoctoral researchers, PhD students and Software Developers and will be part of the Transparent Digital Governance research strand of the ADAPT Centre under the supervision of Dr Malika Bendechache in the university of Galway.

As part of this studentship, the successful candidate will have the opportunity to:

➔ Design and deploy new analytics techniques, algorithms and frameworks for assessing data value that takes into account bias, toxicity, and ethical issues.
➔ Design of appropriate research methodology, evaluation and validation criteria for the proposed ideas and models;
➔ Enhance their reputation through publishing in top-quality journals and conferences in collaboration with team members;
➔ Nationally and internationally present and represent the groundbreaking research carried out by their and the research team;
➔ Contribute to short-term, focused industry projects with ADAPT.

On completion of the PhD program the candidate

➔ Will have demonstrated understanding of the problems related to Data Governance, particular data value and the ethics and trustworthy aspects of AI-enabled systems. Thus, mastering the skills and methods of empirical research in this emerging fields;
➔ Will have demonstrated capabilities of defining, designing and implementing appropriate research methodologies with academic integrity and made substantial contribution that extends the knowledge in the field;
➔ Be able to communicate concepts and research outputs with their peers and the research community at large and with people outside the field.

Informal Inquiries can be sent to Dr Malika Bendechache (malika.bendechache@adaptcentre.ie)

Minimum qualifications:

- 2.1 or higher primary degree in computer science or an aligned field
- English language requirements for non-native speakers of English is available here: https://www.universityofgalway.ie/international-students/studyinireland/entryrequirements/

Preferred qualifications:

- MSc or equivalent in computer science or an aligned field

Preferred Skills:

- Strong analytical skills and problem-solving skills;
- Practical knowledge of modern data management systems, data value, data quality, data governance; AI Ethics, machine learning and data science tools and techniques.
- Experience doing research in any topic;
- Academic publication track record;
- Experience working on collaborative research with industry or other stakeholders;
- Excellent written and verbal communication skills.

Application Process

- Cover Letter
  - A personal letter of motivation, indicating why you wish to conduct this research project offered by ADAPT, and why you expect that you will be able to complete the research successfully for example ; (500 words maximum)
- Detailed CV
  - Detailed curriculum vitae, including – if applicable – evidence of strong analytical skills; details of your final year undergraduate or MSc project; project code repositories; practical knowledge of knowledge graphs, natural language processing, data science; academic publication track record; experience working on collaborative research with industry or other stakeholders; excellent written and verbal communication skills; two academic references.

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.