

PhD Studentship in Causal Machine Learning for Multi-modal data in NLP/Healthcare/Finance

Principal Supervisor: Mohammed Hasanuzzaman (<https://mohammedhasanuzzaman.github.io/>)

Location: ADAPT Centre, MTU, Cork Campus, Ireland

Anticipated Start Date: September, 2023

Closing Date: 27 June, 2023

ADAPT Centre (<https://www.adaptcentre.ie/>), Munster Technological University (MTU), Ireland and Bluetensor S.r.l, Italy (<https://bluetensor.ai/>) have formed a partnership to fully fund a 4-year PhD position that offers the opportunity to work on innovative projects and make a significant contribution at the interface between machine learning/deep learning, healthcare/finance and Natural Language Processing (NLP) with potential research direction in one of the following areas: Causal reasoning for multi-modal generation, Causal discovery from multi-modal data, Causal reasoning for multi-modal decision making, Causal inference across modalities and Evaluation metrics for multi-modal causal learning. However, we are open to align the Ph.D. research project with your individual interests and expertise. The specific focus and trajectory of the research will be influenced by your personal preferences and research objectives. Your unique perspective and ideas are highly encouraged and valued, as they will contribute to shaping the research project. The successful candidate will be hosted at ADAPT [Centre @ MTU](#), Ireland and closely work with a team of mentors.

Why ADAPT Centre?

- 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 tax-free stipend of approx. €18,500 per year for up to four years including tuition fees, research and equipment costs and all costs associated with training related covered.

Why Bluetensor?

- Combine research with field experience. Every day we apply the latest technological innovations by selecting those that are best suited to the business, developing customised solutions to solve our customers' concrete problems.
- Compare yourself with different sectors. See how your research is indispensable in different businesses. BlueTensor develops artificial intelligence projects in industry, education, law, media, etc. participating in public and private tenders.
- Exploit synergies. Technologies become even more powerful when combined with others. BlueTensor has expertise in deep learning, machine learning, predictive analysis, computer vision and natural language processing. In each project we know whether and how to combine algorithms in the best possible way. You will be able to deal with our highly skilled team of data scientists, front-end developers, full-stack developers and AI architects.

Minimum qualifications

- Master's degree in either Natural Language Processing, Artificial Intelligence, Machine Learning, Data Science, Computer Science, Computer Engineering, Electrical and Electronic Engineering or related disciplines with strong programming skills.
- Expertise and interest in Machine Learning/Natural Language Processing/Causal Machine Learning
- Previous scientific publication experience preferred.
- Excellent written and verbal communication and interpersonal skills

Application Process (incomplete application will not be considered)

Interested candidates can send an application with the following documents directly to Mohammed Hasanuzzaman (mohammed.hasanuzzaman@adaptcentre.ie)

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. Details of your final year undergraduate project (if applicable)
 - c. Details of your MSc project (if applicable)
 - d. Details of any relevant modules previously taken, at undergraduate and/or Master level.
 - e. 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.

About Bluetensor

Bluetensor was founded in Trento (Italy) in 2018 and today its team consists of 13 resources. By combining Project Management with the Agile method, Bluetensor meets clients' needs by developing solutions that have an impact on business time, costs and processes.

The projects carried out over the past three years have earned Bluetensor an excellent international reputation. One of its reasoning systems, for example, is being beta tested by teams of experts on five continents.

Moreover, thanks to its strong expertise and challenging projects, Bluetensor has created two new start-ups to apply artificial intelligence in particular sectors.

Bluetensor's founders believe in the importance of scientific research. That's why Bluetensor is sponsor of the Doctorate in Industrial Innovation at the University of Trento and partner of various initiatives with Italian and foreign universities.

BlueTensor's vision: "Promote a smarter way of working and a better lifestyle by empowering people and organizations through Artificial Intelligence."