

Post Title: Research Scientist: Machine Learning Research Engineer

Post Duration: 15 months

Salary Scale: 65.000 – 75.000 EUR

Location: ADAPT Centre, Trinity College, Dublin 2

Reports to: Associate Prof, Course Director, Computer Science TCD, Dr. Carl Vogel

Closing Date: 20/10/2023

Apply: aiden@shannonrecruitment.ie

Contenseo is an innovative project in content licensing supported by artificial intelligence, explicit knowledge representation and reasoning and anchored in data-mined regularities, funded towards the creation of a commercial entity.

At Contenseo, we are transforming the process of content licensing.

Our cutting-edge one-touch content licensing system not only ensures copyright protection but also empowers buyers to license content with unparalleled ease.

We're dedicated to pushing the boundaries of technology and innovation to create solutions that make a real impact in the digital world.

Opportunity overview

As a Machine Learning Research Engineer at Contenseo, you will be an integral part of our dynamic team based in the prestigious Adapt Centre at Trinity College.

You'll have the opportunity to work on our groundbreaking content licensing system, utilising your expertise in machine learning to enhance copyright protection and streamline the licensing process.

We require a solutions-focused person that can deliver a high-valuable impact to the project through the implementation of technical solutions to the project goals, in particular to develop an Artificial Intelligence (AI) 'digital agent' to assist those who licence (buy) content and those who licence (sell) content online. Currently, licensing content remains a very fragmented, form-heavy and human-centric user experience (UX). The project aims to develop an AI digital agent - which will have the following innovative features: An AI-powered content licensing 'digital agent' will increase efficiency, reduce costs, and generate extra revenues by automating and streamlining the process of identifying, tracking, and licensing copyrighted content. Such an agent will offer several competitive advantages and

value propositions, as it will automate the process and remove many touchpoints that currently require a person's attention. Joining Contenseo means you're not just taking a job, you're embarking on a journey of growth and innovation. The Adapt Centre at Trinity College provides a vibrant environment that fosters learning and collaboration. You'll have the chance to work on impactful projects and shape the future of content licensing.

Team:

The successful candidate will be joining a group that includes **Dr. Carl Vogel** as research leader, **Stephen Conmy** as Commercial manager, **Aiden Murray** as Product manager and a systems engineer, who will together develop a prototype architecture that exploits the knowledge it captures.

Funding

We are proud to be backed by the EU Communications Fund and Enterprise Ireland, which enable us to pursue ambitious goals and drive innovation in the field of content licensing.

Our startup's dedication to cutting-edge technology and market disruption has garnered support from these esteemed funding sources.

Trinity College Dublin's ADAPT Centre

Contenseo is closely affiliated with Trinity College Dublin's renowned ADAPT Centre – the hub of AI excellence in Ireland.

This unique collaboration allows us to tap into the expertise of leading AI researchers and practitioners, fostering an environment of innovation, learning, and collaboration.

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 modelling, 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 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:

- Exposure and free access within a multi-disciplinary ecosystem across 8 leading Irish universities
- Opportunity to build your profile at international conferences and global events
- Fast-track your career through formalised training & development, expert one-on-one supervision and exposure to top AI specialists
- You will develop as a researcher through access to a wide training & development opportunity
- You will build a strong network through opportunities to liaise with internal and external stakeholders, including industry and academic partners/collaborators.
- Involvement with all aspects of the project lifecycle
- Participate alongside leading experts in exciting project activities and events to further research in AI, ML and digital agents that are capable of contract negotiations.
- Contribute to the development of the next generation of thinkers and innovators through teaching and supervision activities

Key role responsibilities:

- Collaborate with cross-functional teams to develop and implement machine learning algorithms for enhancing content licensing and copyright protection.
- Design and conduct experiments to evaluate model performance and iterate on improvements.
- Contribute novel ideas to solve complex challenges in content licensing and copyright enforcement.

- Stay up-to-date with the latest advancements in machine learning research and apply them to our projects.
- Publish research outcomes in appropriate scholarly venues.

Qualifications and skills:

- PhD or equivalent in computer science or aligned field is required
- Strong background in machine learning, deep learning, and statistical analysis.
- Strong background in knowledge representation and inference anchored in formal logics.
- Strong background in analysis of data structures and algorithms.
- Proficiency in Python and relevant libraries (e.g., TensorFlow, PyTorch).
- Experience with data preprocessing, feature engineering, and model evaluation.
- Advantage of having prior experience in legal language processing
- Advantage to have a background in text-based human interaction / dialogue systems
- Excellent problem-solving skills and the ability to think critically.
- Excellence in peer-reviewed research publication.
- Effective communication skills to collaborate with diverse teams.

Benefits

- The prospect of a full-time position at the end of the 15-month project.
- Equity share in the business for the right candidate.
- Competitive salary
- Flexible working arrangements
- Computer and peripherals of your choice
- A fast-paced environment with impactful work
- Pension
- Day Nursery
- Travel Pass Scheme
- Bike to Work Scheme
- Employee Assistance Programme
- Sports Facilities, On site Gym and swimming pool
- 22 days of Annual Leave
- Paid Sick Leave
- Training & Development
- Staff Discounts

Application Process

Interested candidates send their application directly to Aiden Murray – aiden@shannonrecruitment.ie. Applications must include:

- Cover letter
 - Please outline your experience (work & academic), and your interest in, and suitability for, the role.
 - Please include 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.
 - Also, what motivates you personally and professionally.
 - Outline why you consider yourself a solutions-focused team player.
- CV
 - Detailed curriculum vitae, including relevant peer-reviewed publications;
 - **Informal enquiries about the role can also be sent to Aiden Murray – aiden@shannonrecruitment.ie**

About the ADAPT Centre

ADAPT is the world-leading SFI research centre for AI Driven Digital Content Technology, coordinated by Trinity College Dublin and based within Dublin City University, University College Dublin, Technological University Dublin, Maynooth University, Munster Technological University, Technological University of the Shannon, and the University of 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.

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.