



**Research Software Engineer
Trainee Analyst Programmer
ADAPT SFI Centre for Digital Media Technology
Fixed Term Contract up to 6 Months**

DCU

Dublin City University www.dcu.ie is a young, ambitious and vibrant University, with a mission 'to transform lives and societies through education, research, innovation and engagement'. Known as Ireland's 'University of Enterprise and Transformation', it is committed to the development of talent, and the discovery and translation of knowledge that advances society and the economy. DCU is the Sunday Times Irish University of the Year 2021. The University is based on three academic campuses in the Glasnevin-Drumcondra region of north Dublin. It currently has more than 18,000 students enrolled across five faculties – Science and Health, DCU Business School, Computing and Engineering, Humanities and Social Sciences and DCU Institute of Education. DCU is committed to excellence across all its activities. This is demonstrated by its world-class research initiatives, its cutting-edge approach to teaching and learning, its focus on creating a transformative student experience, and its positive social and economic impact. This exceptional commitment on the part of its staff and students has led to DCU's ranking among the top 2% of universities globally. It also consistently features in the world's Top 100 Young Universities (currently in QS Top 70 Under 50, Times Higher Top 150 Under 100). DCU is placed 84th in the world, in the Times Higher Education University Impact Rankings – measuring higher education institutions' contributions towards the UN Sustainable Development Goals. Over the past decade, DCU has also been the leading Irish university in the area of technology transfer, as reflected by licensing of intellectual property.

Background

This post creates an exciting opportunity for the right candidate to make a critical contribution to an ongoing SFI COVID response project based on a substantial amount of prior research. The ADAPT Centre has collaborated with the Centre for Innovative Human Systems (<https://www.tcd.ie/cihs/>) to conduct interdisciplinary research on the role of people in complex social and technical systems in aviation and healthcare. A programme of national European research with industry on risk, safety, organisational change and technology innovation has developed new concepts and processes for the governance of risk. This forms the basis for a Covid response project to deliver and enhance the joint DCU-TCD ARK software-based risk governance platform.

We now wish to recruit a Research software engineer on a fixed term basis to participate in the delivery of an SFI-sponsored covid response project on knowledge-based risk management for PPE infection control risk governance. This interdisciplinary project is being conducted at the intersection of computer science, organisational psychology and clinical risk management and draws on full stack

development, user interface design, and semantic web technologies to build a risk governance platform.

The Project and Role Profile:

The software engineer will work as a member of a small agile team developing a prototype for live trials with clinical staff. The main responsibility will be to develop a user interface and web application backend to support healthcare risk analysis techniques developed by ADAPT/CIHS researchers and to connect this front end with knowledge graphs and analytics frameworks. This will include working with our partners, St James Hospital, Dublin Fire Brigade, Stewards Care, Tusla, and Beacon Hospital, to define requirements. You will be working with knowledge engineers, risk experts, clinical staff and socio-technical systems researchers. In addition to designing interfaces for risk analysts, it will be necessary to design mobile interfaces for reporting to risk information users like nurses. This project presents the successful candidate with the opportunity to work in an exciting, fast moving and excellent technical environment, playing an important role in the ARK-Virus research project and reporting to the project supervisor, Dr Rob Brennan. The candidate will also develop their leadership skills by mentoring interns and more junior staff members

Duties and Responsibilities:

- Web platform and frontend software development using javascript and React.
- RDF Knowledge base query development using SPARQL.
- Working as part of a small team using agile development methodology and industry best practice tools
- such as git.
- System administrator for VM-based web application on remote server.
- User interface design and implementation.
- Working with senior researchers to liaise with stakeholders to elicit requirements, test system and
- maintain it during trials.
- Performing knowledge transfer and mentoring for more junior members of staff.

Qualifications and Experience:

Minimum Criteria

Candidates must have a degree in an appropriate area or equivalent (NFQ Level 7), (typically an in Computer Science, Software Engineering or a related discipline) and the following skills and experience.

- Deep knowledge of modern web application development in javascript, node.js
- Project experience developing React/js components.
- Experience of industrial software development including source control, teamwork, requirements analysis, coding standards, web systems testing, and VM deployment.
- Track record of executing projects that manage and query (SPARQL) data in Jena triple store (RDF).
- Experience in joint industry-academic research project delivery.

In addition to the above it is desirable that the successful individual possess a subset of the following skills and experience:

- Extensive experience of developing and deploying javascript /CSS and web front ends and practical experience of REST or web services backends configuration and administration
- Familiar with mobile application development
- Experience working with UNIX, Linux, VMWare, OSX and Windows operating systems
- Experience of risk management application development
- Experience with the ARK platform
- Good written and oral proficiency in English.
- Strong communication and interpersonal skills both written and verbal.
- Proven aptitude for Programming, System Analysis and Design.
- Proven ability to prioritise workload and work to exacting deadlines.
- Flexible and adaptable in responding to stakeholder needs.
- Experience in releasing code to live production environments.
- Enthusiastic and structured approach to research and development.
- Excellent problem solving abilities.
- Desire to learn about new products, technologies and keep abreast of new product, technical and research developments

Essential Training:

The post holder will be required to undertake the following essential compliance training: Orientation, Health and Safety, Research Integrity and Intellectual Property and Data Protection training. Other training may need to be undertaken when required.