



Research Centre

Insight SFI Research Centre for Data Analytics

Post title

Postdoctoral Researcher
AlrAware Project, AI and Wearable Sensors for
Cleaner Air

Level on Framework

Level 1

Post duration

Fixed Term Contract up to 9 Months

Dublin City University

Dublin City University (DCU) is a leading innovative European University. It is proud to be one of the world's leading Young Universities and is among the world's top 2% globally. DCU is known as Ireland's University of Impact, with a mission to 'transform lives and societies' and focuses on addressing global challenges in collaboration with key national and international partners and stakeholders.

DCU has over 20,000 students in five faculties spread across three academic campuses in the Glasnevin-Drumcondra area of North Dublin. Thanks to its innovative approach to teaching and learning, the University offers a 'transformative student experience' that helps to develop highly sought-after graduates. DCU is currently No. 1 in Ireland for Graduate Employment Rate, and for graduate income (CSO).

DCU is a research-intensive University and is home to a number of SFI-funded Research Centres. The University participates in a range of European and international research partnerships. DCU is also the leading Irish university in the area of technology transfer as reflected by licensing of intellectual property.

As a 'People First' institution, DCU is committed to Equality, Diversity and Inclusion - a University that helps staff and students to thrive. The University is a leader in terms of its work to increase access to education, and is placed in the world's Top 10 for reducing inequalities in the Times Higher Education Impact Rankings.

Insight SFI Research Centre for Data Analytics

The Insight SFI Research Centre for Data Analytics (<http://www.insight-centre.org>) is an SFI funded Research Centre which brings together researchers from University College Dublin, NUI Galway, University College Cork, and Dublin City University, as well as other partner institutions,

Trinity College Dublin (TCD), University of Limerick (UL), Maynooth University (MU) and Tyndall National Institute. It creates a critical mass of more than 400 researchers from Ireland's leading ICT clusters to carry out research on a new generation of data analytics technologies in a number of key application domain areas, such as Health and Human Performance, Smart Communities, Internet of Things, Enterprise and Services and Sustainability and Operations.

The €150m Centre is funded by Science Foundation Ireland and a wide range of industry and European Union partners. Insight's research focus encompasses a broad range of data analytics technologies from machine learning, decision analytics and social network analysis to linked data, recommender systems and the sensor web. Together, with more than 220 partner companies, Insight researchers are solving critical challenges in the areas of Connected Health and the Discovery Economy.

The Project

The aim of this project is to investigate the use of low-cost portable/wearable air quality sensors to raise awareness about air pollution and to provide useful data that may be used to inform policy about health and the environment. The deployment of such sensing devices within communities will allow citizens to be involved in the data collection during their daily activities as an engaged research project highlighting the link between health and the environment.

This project will involve a pilot study using wearable sensors to monitor air quality and well-being. The fusion of physiological and environmental data will provide a valuable knowledge base for exploring the inter-relationship between our environment and our health. Data analysis techniques using ML and AI will be used to investigate his relationship between physiological data and environmental data., and suitable visualization approaches will be needed to communicate these findings to inform individuals and provide a knowledge base to inform decision makers and policy influencers to advocate for cleaner air.

The Role

The candidate will work with the Sensors Research Team to investigate the feasibility of wearable sensors to monitor air quality, health and the interrelationship. The candidate will be based in the School of Electronic Engineering in DCU and will collaborate with the School of Chemistry in DCU, Tyndall National Institute in UCC and TU Dublin.

Principal Duties and Responsibilities

Specific duties include:

- Conduct research into wearable sensor systems for health and environmental monitoring.
- Provide support and advice to postgraduate and undergraduate students working on similar topics.
- Assist the Principal Investigators (PI) in securing funding to further this research.
- Produce top quality journal and conference publications, in collaboration with the PIs.
- Participate in Insight Centre activities, including industry showcases, annual reviews and industry and agency visits to the Insight labs.

- Carry out administrative work associated with the programme of research as necessary.
- Other tasks relevant to successfully implementing the assigned research programme.
- Liaise with both external and internal stakeholders, including academics, undergraduate and postgraduate students.
- Preparation of project updates and reports.
- Deliver research outputs according to project schedules.
- Attend and present results at project progress meetings.

Qualifications, Skills and Experience Required

The ideal candidate will have a PhD in Electronic Engineering, Computer Science, Data Analytics or a related discipline with strong prototyping skills and relevant experience in electronic systems design and development.

Skills

- Excellent written and oral proficiency in English (essential).
- Excellent written and verbal communication and interpersonal skills.
- Proven ability to prioritize workload and work to strict deadlines.
- Ability to work in a team and to take responsibility to contribute to the overall success of the team.
- Strong problem-solving abilities.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline

Understanding the Research Environment – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications

Communicating Research – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students

Managing & Leadership skills - Demonstrates the potential to manage a research project including the supervision of undergraduate students

Essential Training

The postholder will be required to undertake the following essential compliance training: Orientation, Health & Safety, Data Protection (GDPR) and all Cyber Security Awareness Training. Other training may need to be undertaken when required.

Research Career Framework

As part of this role the researcher will be required to participate in the DCU Research Career Framework (<http://dcu.ie/hr/ResearchersFramework/index.shtml>). This framework is designed

to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path.

DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally focused environment in which you can advance your academic career.

Dublin City University is an equal opportunities employer.

In line with the Employment Equality Acts 1998 – 2015, the University is committed to equality of treatment for all those who engage with its recruitment, selection and appointment processes.

The University's Athena SWAN Bronze Award signifies the University's commitment to promoting gender equality and addressing any gender pay gaps. Information on a range of university policies aimed at creating a supportive and flexible work environment are available in the [DCU Policy Starter Packs](#)