



Research Centre	Insight SFI Research Centre for Data Analytics
Post title	Postdoctoral Researcher Wearable Electronics
Level on Framework	Level 2
Post duration	Fixed Term Contract up to 12 months

Dublin City University

Dublin City University (DCU) 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’, DCU is a values-based institution, committed to the delivery of impact for the public good. DCU was named Sunday Times Irish University of the Year 2021.

DCU is based on three academic campuses in the Glasnevin-Drumcondra region of north Dublin. More than 18,000 students are 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 delivering a transformative student experience, and its positive social and economic impact. The university continues to develop innovative programmes in collaboration with industry, such as the DCU Futures suite of degrees, which are designed to equip graduates with the skills and knowledge required in a rapidly evolving economy.

DCU’s pursuit of excellence has led to its current ranking among the top 2% of universities globally. It is also one of the world’s Top Young Universities (QS Top 100 Under 50, Times Higher Top 150 Under 100). In the Times Higher Education University Impact Rankings 2021, DCU ranked 23rd in the world for its approach to widening participation in higher education and its ongoing commitment to eradicating poverty, while it ranks 38th globally for its work in reducing inequality and 89th globally for gender equality.

The university is ranked 23rd in the world and first in Ireland for its graduate employment rate, according to the 2020 QS Graduate Employability Rankings. Over the past decade, DCU has been the leading Irish university in the area of technology transfer, as reflected by licensing of intellectual property.

As part of this role the researcher will be required to participate in the DCU Research Career Framework. This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

Background

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

Wearable sensors can have major impact on how we deliver healthcare, promote well-being and improve fitness and performance. Wearable sensors can not only provide a personalised picture of an individual's health status, but also gather information about health trends across different populations. In order to realise the full potential of wearable sensors these devices must be integrated into our lifestyles in a practical way, i.e. straightforward to use, robust and comfortable to wear. There is also a duty to develop sustainable wearable systems, considering the power requirements, materials and the lifecycle in the overall design.

The Role

This project involves the integration of sustainable sensing devices into smart clothing/footwear. This will include the development of electronic systems to interface with novel sensing materials and the development of electronic systems to interface with energy harvesting textiles. The aim is to develop a greener, more sustainable approach to connected devices within today's digital world.

Applications of this technology will be to sense the physiology and movement of the wearer, and to investigate wearable sensors that can monitor the wearer's environment.

The candidate will work with the Wearable Sensors team to develop prototypes systems that integrate novel sensors and energy harvesting methods. Given the interdisciplinary nature of the Insight Centre there are facilities to test the prototypes for different use cases and collaborate with end users to inform the design of the wearable systems. The aim will be to develop wearable devices that can be manufactured for large-scale deployment to collect datasets for a diverse range of health and sports applications.

Principal Duties and Responsibilities

- Conduct a programme of research into sustainable wearable sensor systems.
- Provide support and advice to PhD students working on similar topics.
- Assist the Principal Investigator (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/Mechatronics Engineering or a related discipline with strong prototyping skills and relevant experience in electronic systems design and development. It is essential that the candidate have:

- 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

Training required for the role should be entered here. At a minimum, the following should be entered in addition to other applicable, role specific mandatory training:

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

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](#)