Insight
SFI RESEARCH CENTRE FOR DATA ANALYTICS

DCU

Research Centre:	**Insight SFI Centre for Data Analytics,** Dublin City University, Dublin, Ireland
Post title:	**PhD** (Smart garments and electronic textiles)
Post duration:	**Up to 4 years (depending on the applicant's background)**

Background

The Insight 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), National University of Ireland, Maynooth (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.

Area of research: Smart garments and electronic textiles.

Smart garments offer a natural means of human computer interaction. Textile sensors can sense body movements and gestures and also physiological signals such as breathing and heart rate. Novel chemical sensors can assess our health through non-invasively sampling of sweat, or sensing hazards in the air around us.

Wearables have become an integral part of the Internet of Things and play a major role in personalised health, promoting wellness and enhancing athletic performance. Smart garments are the next phase of wearables, going beyond conventional electronic components. Smart garments can empower us to manage our own health, well-being and fitness; they can support the remote delivery of healthcare to prevent, treat and manage illness and assist with the remote treatment of injury and recovery.

This project will address some of the challenges in creating electronic textiles and smart garments, including flexibility, durability, accuracy, usability and sustainability.

This project will be largely interdisciplinary, with a basis in Electronic/Biomedical Engineering and bridging the disciplines of Engineering, Computing, Chemical Science, Health and Human performance within the Insight Centre. There will also be an opportunity to collaborate with Tyndall National Institute, UCC's flagship research institute.

Eligibility:

BEng in Electronic Engineering, Mechatronic Engineering or Biomedical Engineering or other relevant discipline is expected but candidates with other backgrounds will be considered on a case-by-case basis.

To register for a Postgraduate Research programme, a candidate must normally have obtained a primary degree classification equivalent to Lower Second Class Honours or above, from an approved University or an approved equivalent degree-awarding body, or have an approved equivalent professional qualification in an area cognate to the proposed research topic. See http://www.dcu.ie/registry/postgraduate/faq.shtml#q3

English language requirements for non-native speakers of English is available here: https://www.dcu.ie/registry/english.shtml

Essential Skills:

- Hardware development and prototyping
- Signal processing
- Computer programming
- Strong interpersonal communication skills
- Creative and Critical Thinker

Desirable skills:

- Experience in wearable sensors
- Experience with wireless networks and RFID
- Prototyping and programming
- Publication activities in relevant disciplines

The successful candidate will also be expected to participate in Graduate Training:

Advanced training, in the form of accredited modules, known as 'Graduate Training Elements' or GTEs, are an important aspect of DCU's graduate research experience. Information on graduate training at DCU is available here: https://www.dcu.ie/graduatestudies/training.shtml

The successful student will be expected to undertake and pass a minimum of 20 credits of taught modules for the duration of their studies.

Training

The successful candidate will be required to undertake the following training:

- Orientation
- Health & Safety
- Intellectual Property (IP)
- Data Protection (GDPR)
- Other training may need to be undertaken when required

Stipend

This is a 4 year fully funded structured PhD position with a stipend of €18,500 per year (tax-free, tuition fees paid).

Application Process

All expressions of interest, to include

1. CV including relevant publications and contact details of 2 referees
2. 1 page cover letter detailing relevant experience and interest in this specific position (please check the list of essential and desirable skills in preparing this letter)

in PDF only, are to be submitted by email to **Dr. Shirley Coyle, shirley.coyle@dcu.ie**

Please clearly state the role that you are applying for in your application and email subject line:
PhD Smart garments and electronic textiles

Application End Date: 19th February 2021

Interviews will be carried out as soon as suitable candidates are identified.

Start Date: The position commences in March or April 2021 depending on the availability of the applicant.