Research Assistant Research – NeX Project (Two Posts)
Insight SFI Research Centre for Data Analytics
Fixed Term Contract up to 11 Months

Overview

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

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 project, NeX, is addressing the needs of healthy older adults living independently and alone by deploying a range of in-situ in-home sensors to sensor gather data from their homes. The sensors include contact sensors on doors, windows and presses, presence sensors in certain rooms, sensors measuring the use of electrical devices like kettles and microwaves, etc. This data will be analysed for event detection (preparing and eating meals, leisure activities like watching TV) as well as for overall patterns and periodicity. Pilot trials have already taken place and we are about to start further trials with a larger cohort of subjects, meaning further data gathering. Participants are recruited through DCU's CEIC centre in the School of Nursing who provide feedback on the outcomes from data analysis, to participants.

The Role

A data scientist is required to assist with analysis on the data gathered from NeX sensor

Duties and Responsibilities

- Conduct a programme of research into analysis of sensor data using machine learning, data imputation and signal processing techniques.
- Using Python and machine learning environments is a strong prerequisite as well as strong data visualisation skills.
- Assist the Principal Investigators (PIs) in developing and testing software, evaluating large sets of participant data, generate visualisations and interfaces to access to participant data.
- Perform data analysis on participant data using machine learning and statistical techniques and present outputs of this analysis to the rest of the project team and as part of project reviews, to the project funding agency
- Contribute to report writing for formal project deliverables to funding agency.
- Contribute to writing of scientific papers documenting project achievements and progress.
- Maintain a blog or record of project activities, including a log of software developed.
- Participate in Insight Centre activities.
- Carry out administrative work associated with the programme of research as necessary
- Other tasks relevant to successfully implementing the assigned research programme.

Qualifications and Experience

Minimum criteria

The successful candidate must hold a primary honour's degree (NFQ level 8) in a related discipline.

In addition to the above it is desirable that the candidate possess a least one years' relevant experience and a subset of the following skills

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.

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

Additional Information
The successful candidates will be offered opportunities for developing their own careers in a number of directions including support for conference/workshop travel, upskilling through Insight's continuous professional development in areas like research ethics and data privacy, student supervision and development and submission of their own research project proposals.