Insight Centre for Data Analytics

Postdoctoral Researcher Level 1, TRACTION project

Fixed term contract – up to 36 months

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.

The Performance Engineering Laboratory (PEL) at DCU is a research group which aims at developing performance-based solutions for next generation information and communication technology (ICT) systems. The research carried out within PEL@DCU focuses on the areas of Mobile and Wireless Communications, Quality, Performance and Energy-aware Rich Media Content Delivery and Adaptive Technology-enhanced Learning and reflects the synergy between electronics, informatics and software engineering for ICT progress in the 21st century.

The Project
The specific project TRACTION for which these positions are advertised is funded by the EU Horizon 2020 programme and involves collaboration with 8 other partners from 5 EU countries. TRACTION will be hosted by PEL@DCU and Insight Centre for Data Analytics and focuses on opera and will define new forms of artistic creation through which marginalised groups of people will work with artists to tell stories relevant to their life and present society. By combining best practice in participatory art with digital technology innovations, new approaches in the following three aspects will be proposed and tested: a) opera creation and production; b) immersive and interactive digital media; and c) social integration and community development.

In particular the project will perform research, design and develop a collaborative and participatory production toolset, establishing a novel workflow for co-creation and co-design of opera. The toolset will include a front-end for conversational support with wide artistic community, tools for user generated rich media capture, such as audiovisual content or immersive 360 videos, smart rich media editing mechanisms, narrative engines and algorithms and interactive adaptive media distribution technologies, that will provide as an outcome interactive audiovisual content to assist traditional and novel opera formats. The toolset will be tested in real life opera pilots.

Main Duties and Responsibilities
Reporting to his/her Principal Investigator the Postdoctoral Researcher will:

- Conduct research, software development, deployment and testing under the supervision and direction of the Principal Investigator
- Engage in appropriate training and professional development opportunities as required by the Principal Investigator, Centre, School or University in order to develop research skills and competencies
- Gain experience and contribute to grant writing with the assistance of and under the supervision of the Principal Investigator
- Engage in the dissemination of the results of the research in which they are engaged, as directed by, with the assistance of and under the supervision of the Principal Investigator.
- Acquire generic and transferable skills (including project management, business skills and postgraduate mentoring/supervision)
- Engage in the broader research and scholarly activities of the research group, Centre, School or University
- Provide assistance and advice to PhD students working on similar topics.
- Take leadership and contribute to generation of top quality papers, reports and funding proposals, in partnership with the Principal Investigator.
- Carry out additional duties, including administrative work, as may reasonably be required within the general scope and level of the post
- Participate in Insight Centre activities, including industry showcases, annual reviews and industry and agency visits to the Insight labs.

**Minimum Criteria**

- Applicants must have a PhD in Computer Science, Engineering or a related discipline with strong software and programming skills and relevant experience in telecommunications or networking-related areas.

**Criteria**

- Appropriate technical competence and research experience in areas related to computer networks, rich media processing and analysis, rich media content delivery, quality of service, quality of experience.
- Good knowledge of Java or C/C++.
- Experience with modelling and simulations

**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.

**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](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.

**Mandatory Training**

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

**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.