



**Research Centre:** Insight Centre for Data Analytics

**Post title:** Postdoctoral Researcher

**Level:** Level 1

**Post duration:** Fixed Term Contract up to February 2020

### **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 to advance your academic career.

An exciting research position in a very innovative, applied research initiative embedded in Dublin City University – Ireland’s University of Enterprise. FPC@DCU – Ireland’s first Fraunhofer initiative - engineers microfluidics-enabled, next-generation for the benefit of people and societies in collaboration with the Fraunhofer Institute for Production Technology (IPT) in Germany. Common fields of application are in-vitro (“Point-of-Care”) diagnostics, pharma, life-science research, agrifood and environmental monitoring. FPC@DCU therefore operates at the challenging crossroads of microsystems engineering and the life sciences.

### **Background**

The Insight Centre for Data Analytics (<http://www.insight-centre.org>) is a joint initiative between researchers at Dublin City University, NUI Galway, University College Cork, and, University College Dublin, as well as other partner institutions. It brings together a critical mass of more than 450 researchers from Ireland's leading ICT centers to develop a new generation of data analytics technologies in a number of key application areas.

The €88m Centre is funded by Science Foundation Ireland and a wide range of industry 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 70 partner companies, Insight researchers are solving critical challenges in the areas of Connected Health and the Discovery Economy. Current project funding is to July 2019.

## **The Project**

The specific project for which this role is being recruited, involves the development of computer vision techniques for tracking individuals and groups across a CCTV camera network, with a view to understanding human movement in an urban environment for applications in health and safety, crowd load balancing and retail.

## **Background & Role**

Insight wishes to recruit a Postdoctoral Researcher on a fixed term contract basis to be responsible for investigating and reporting on novel techniques for understanding human movement in urban environments.

## **Main Duties and Responsibilities**

Reporting to his/her Principal Investigator the Postdoctoral Researcher will:

- Conduct a literature review on the current state of the art approaches considering the technical requirements of the project.
- Contribute to the design and implementation of the project's prototype demonstrators.
- Develop machine-learning models, specifically deep learning for computer vision.
- Develop evaluation statistics/metrics to test the effectiveness of prototypes/solutions.
- Participate in Insight Centre activities, including industry showcases, annual reviews and industry and agency visits to the Insight labs.
- Assist with presentation and documentation of demonstrator systems for the industry sponsor.
- Other tasks relevant to successfully implementing the project's and the Research Centre's research programme.
- Carry out administrative work associated with the programme of research as necessary

**Below are some pointers to examples of technologies that are used in our projects, to indicate the type of experience we require. The successful candidate should demonstrate strong competence in some of these technologies:**

- Prior experience of applying and extending the existing state of the art in deep learning for computer vision
- Knowledge of one or more of: Python, C, C++, Java
- Experience working with UNIX, Linux, OSX or Windows operating systems.
- Experience in developing both supervised and unsupervised machine learning strategies.
- Experience in one or more machine-learning frameworks, such as scikit-learn, PyTorch, Tensorflow, Theano, Keras, Lasagne etc.
- Experience of modern techniques and implementations in machine-learning and data visualization

## **Skills**

- Excellent written and oral proficiency in English (essential)
- Excellent written and verbal communication and interpersonal skills.
- Proven ability to prioritise 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.

### **Minimum Criteria**

The ideal candidate will have a PhD in Computer Science, Engineering or a related discipline and computer vision

### **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

### **Candidates will be assessed on the following competencies:**

- Discipline specific knowledge and Research Skills (demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline)
- 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)
- Understanding the Research Environment (demonstrates an awareness of the research environment (e.g. funding bodies) and takes responsibility for how their research is conducted)

**Salary Scale:** \* €36,854 – €47,728

*\*Appointment will be commensurate with qualifications and experience will be made on the appropriate point of the salary scale, in line with current Government pay policy*

**Closing date:** 28<sup>th</sup> September 2018

### **Application Procedure**

Application forms are available from the DCU Current Vacancies (open Competitions) website at <http://www.dcu.ie/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0) 1 7005149.

**Please clearly state the role that you are applying for in your application and email subject line: Job Ref #992 Post-Doctoral Researcher, Insight**

Applications should be submitted by email to [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie) or by Fax: +353 (0)1 7005500 or by post to the Human Resources Department, Dublin City University, Dublin 9. Human Resources Department, Dublin City University, Dublin 9. Tel: +353 1 700 5149; Fax: +353 1 700 5500 Email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

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