Dublin City University

INSIGHT: Ireland’s Big Data and Analytics Research Centre

Research Centre: INSIGHT

Post Title: Postdoctoral Researcher, Movement Biomechanics

Level on Framework: Level 1

Post Duration: Fixed Term Contract - Up to 4 years

Research Career Framework

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.

Project Overview

This project is a collaboration between the Sport Surgery Clinic, Dublin, INSIGHT, Dublin City University, and the School of Health and Human Performance, Dublin City University.

Sports Surgery Clinic:

The Sports Surgery Clinic is Ireland's leading private Orthopaedic and Sports Medicine Hospital. The Sports Medicine department is at the forefront of clinical and applied research in the field of Athletic groin and anterior cruciate ligament injury and pain. The SSC has recently opened a purpose build 3D motion capture laboratory with indoor turf floor to assess athletic groin pain and ACL injury. It is envisaged at this stage the laboratory will see over 500 Post ACL reconstruction patients and 800 Athletic groin pain patients each year.

INSIGHT

The INSIGHT Research Centre for Big Data Analytics is a joint initiative between researchers at Dublin City University, University College Dublin, NUI Galway and University College Cork, as well as other partner institutions. It will bring together a
critical mass of more than 200 researchers from Ireland's leading ICT centers to develop a new generation of data analytics technologies in a number of key application areas.

The €70m center 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 and challenges, from machine learning, decision analytics and social network analysis to linked data, recommender systems and the sensor web. And together with more than 30 partner companies INSIGHT researchers are solving critical challenges in the areas of Connected Health and the Discovery Economy. The Discovery Economy refers to novel products and services based on a better understanding of short and long-term user needs. It combines ideas from personalization and recommender systems with location-based services and the real-time social web. Connected Health advocates a technology-based model for healthcare delivery to maximize healthcare resources and provide increased, flexible opportunities for people to engage with clinicians and better self-manage their own care.

School of Health and Human Performance

Research is a priority within the School of Health and Human Performance. The School aims to bring together multi-disciplinary researchers to address significant topics related to physical activity, sport and health. It has a significant national and international research reputation with state-of-the-art facilities and resources. The biomechanics research group is led by Dr Kieran Moran (www.dcu.ie/info/staff_member.php?id_no=1337)

Principle Duties and Responsibilities

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

- Develop novel means of analyzing biomechanical data to more accurately identify the underlying factors that relate to effective recovery from groin and ACL injury (e.g. using methods within Functional Data Analysis)
- Develop a wireless inertial sensor based system to measure the movement biomechanics of patients outside of the biomechanics lab whilst they are rehabilitating from groin and ACL injuries.
- Develop a novel cluster based marker system to measure patients’ movements using a Vicon Motion Analysis System (to replace the Vicon Plug-In Gait model).
- Liaise with the Sport Surgery Clinic and both internal and external partners/collaborators
- Assist in identifying and developing future research and funding initiatives
- Engage in the dissemination of the results of the research in which he/she is engaged with the support of and under the supervision of the Principal Investigator(s).
- Supervise and assist undergraduate students working in related research areas.
- Engage in appropriate training and development opportunities as required by the
Principal Investigator(s) or the Sport Surgery Clinic.

- Engage in teaching and teaching support as assigned by the Head of School under the direction of the Principal Investigator(s)
- Carry out administrative work associated with the programme of research as necessary, and any other roles identified by the Principal Investigator(s)

Minimum Criteria

Candidates should hold a PhD in Biomechanics. Experience in the areas of novel analysis of biomechanical data, wireless inertial sensor based systems, or/and developing cluster based marker system would be essential. The ideal candidate will also have experience working with industrial or external research partners.

Salary: €37,750 - €46,255 subject to experience & qualifications

Closing date: 21st October 2013

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.

Application Procedure:

Informal enquiries to:

Dr Kieran Moran, XG05, School of Health and Human Performance, Dublin City University, Dublin 9, Ireland. Phone: 00353 1 700 8011, E-mail: Kieran.moran@dcu.ie
Application forms are available at: [www.dcu.ie/vacancies/APPLICATION_FORM_8pg.doc](http://www.dcu.ie/vacancies/APPLICATION_FORM_8pg.doc) and from the 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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