



**Research Centre:** The Rince Institute; Centre for Image Processing & Analysis  
**Post title:** Postdoctoral Researcher-  
*Ultrasound image Analysis*  
**Level on Framework:** Level 1  
**Post duration:** Up to 18 months

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.

#### **Background & Role:**

The Centre for Image Processing & Analysis (CIPA) is one of 3 research centres within The Rince Institute ([www.rince.ie](http://www.rince.ie)). The focus of the centre's research is in the area of Computer Vision and more specifically Image Processing & Analysis (IPA). Our digital and non-digital IPA research programmes relate to issues involved in the acquisition (custom sensor design), processing, quantitative analysis, classification, visualisation and systems engineering (integration) for a wide range of computer vision applications. Specifically, CIPA focuses on the issues involved in the automation or semi automation of image feature segmentation, and its associated quantitative analysis, at both a micro and macro level. Research staff work on computer vision (specifically image segmentation), medical imaging (specifically computer aided detection / diagnosis) and their associated visualisation projects.

CIPA is committed to research excellence. Our posts offer an exciting opportunity for successful candidates to tackle fundamental research problems within a stimulating multi-disciplinary research environment with state of the art facilities and strong links to the national and international research community. The successful candidates will join an active and expanding computer vision and biomedical imaging systems research programme. Further details on the CIPA and its activities can be found on its web-site [www.cipa.dcu.ie](http://www.cipa.dcu.ie).

CIPA has recently been awarded an Enterprise Ireland Innovation Partnership grant to focus on the automatic computer aided detection of reproductive cycle and pregnancy of bovines from ultrasound images. The team is made up of researchers from Dublin City University (CIPA) and Reprodoc Ltd (who specialize in bovine fertility management). We are currently hiring two postdoctoral researchers in CIPA (Dublin) to support this work.

This research aims to develop a computer aided detection system for automatic identification of reproductive cycle and pregnancy of bovines from ultrasound images using computer vision techniques. The automatic Computer Aided Detection (CAD) system can be employed as a first reader for herd management (mainly focused on bovine reproductive cycle and its status) and only use human experts in the minority of cases where abnormalities have been detected by the software. The applied research outputs significantly advance the state of the art and address a real market need.

#### **Principle Duties and Responsibilities:**

This research stream will involve the *automatic identification, analysis and classification of key bovine reproductive (anatomical) features using ultrasound imaging*. The Centre for Image Processing & Analysis (CIPA) at Dublin City University has already developed global 2D and 3D shape extraction and texture analysis techniques for use with ultrasound imaging, and this project aims to build on this work.

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

- Conduct a specified programme of research under the supervision and direction of the Principal Investigator. This will involve image processing, algorithm development, coding, database development, testing and interface design in support of CIPA's contribution to the innovation partnership.
- 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
- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School or Research Centre, or the University.
- Liaise with both internal and external stakeholders including industry and academic partners/collaborators
- Work alongside their team members to ensure that all deadlines and deliverables are met.

#### **Minimum Criteria:**

Applicants should have a PhD in Computer Vision (or a related Computer Science, Engineering or Analytical area) plus significant post doctoral and/or industrial research experience. A record of international collaboration, funding acquisition, research leadership and research management would be an advantage. Experience with ultrasound image analysis / texture analysis and/or geometric shape analysis would also be considered an advantage. Post-doctoral candidates should demonstrate the capacity to be productive researchers. As part of the selection process candidates' publication records will be carefully considered. A self-starting attitude, good presentation skills, teamwork and an eagerness to promote your research are essential.

Salary: €37,750 - €46,255

**Closing date:** 30<sup>th</sup> September 2011

#### **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:**

Laura Robertson, Administrator, CIPA, DCU, Dublin 9

E-mail: [laura.robertson@dcu.ie](mailto:laura.robertson@dcu.ie)

Phone: +353 (0)1 700 6214

**Candidates should submit a completed DCU Application Form along with their CV to email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)**

**Application forms are available from:**

[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 (0)1 7005149; Fax: +353 (0)1 700 5500;

Email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

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