

Dublin City University
Centre for Image Processing & Analysis, RINCE
www.cipa.dcu.ie

Royal College of Surgeons in Ireland, Dublin 2, Ireland.
Molecular & Cellular Therapeutics
www.rcsi.ie

Postdoctoral Research Assistant
Computer Vision : Automated Facial Land marking.

The **Face3D** consortium has recently been awarded a Wellcome (<http://www.wellcome.ac.uk>) Trust grant (2009-2012, Molecules, Genes and Cells Funding Committee) to focus on the analysis of three-dimensional facial dysmorphology. The team is made up of researchers from University of Glasgow (Statistics [Lead], Dental School, Computing Science), Dublin City University (CIPA), Royal College of Surgeons in Ireland (Neuroscience), University of Limerick (Statistics) and Institute of Technology, Tralee (Mathematics).

We are currently hiring a postdoctoral research assistant (to be based in Dublin) to support this work. Glasgow (UK) currently hosts a postdoctoral research assistant who is focused on the statistical aspects of this project. Both research assistants will be expected to work in close cooperation.

Research Question

This research aims to provide tools to extract and analyse important and potentially useful quantitative information on facial shape from three-dimensional images. We plan to identify anatomical landmarks in a more automatic manner than is currently possible, by using techniques of differential geometry to characterize local surface shape and match this with the definitions of landmarks of interest. This will be extended into a quantitative characterization of anatomical curves, and of the entire facial surface, again using differential geometry and template matching on the image data at its highest resolution.

This research will be applied to two important applications areas in the characterization of the facial shape of schizophrenia patients and of patients undergoing orthognathic surgery. The first of these will provide valuable information on the biological processes which underlie schizophrenia. The second will enable surgical outcomes to be assessed in a quantitative and highly informative manner. Further information on the project is available at www.stats.gla.ac.uk/face3d.

The ideal candidate would have the following qualifications:

- Hold a PhD in Computer Science/ Mathematics/ Engineering/ Physics or a related field, and have a solid background in image analysis and applied mathematics.
- Scientific creativity and productivity must be shown by publications in international journals and conferences, within the indicated areas.
- Programming experience in MATLAB, C/C++.
- Previous experience in biomedical imaging oriented projects would be an advantage.

Salary scale: €42,607- €48,528
Location: Dublin (DCU and RCSI)
Reference: *Wellcome-Dublin-PDR*

To apply send a complete CV, a motivation letter, a list of relevant publications and a summary of recent projects and scientific interests, as well as the names and addresses of two referees for letters of recommendation to:

Prof. Paul Whelan (Centre for Image Processing & Analysis, RINCE Institute, Dublin City University, Dublin 9, Ireland, e-mail: cipa@dcu.ie)

or

Prof. John Waddington (Molecular & Cellular Therapeutics, Royal College of Surgeons in Ireland, Dublin 2, Ireland, e-mail: jwadding@rcsi.ie)

Closing Date: **31st July 2010**