



**Insight Centre for Data Analytics
PhD position, Understanding Human Decision Making
through Machine Learning
Up to 4 years in duration**

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.

Area of research: Understanding Human Decision Making through Machine Learning

There is significant variability in human decision-making behaviour within and across individuals. Many factors including age, health, personal experiences, circumstances, environment, stress all contribute to differences in how we evaluate choices, predict the future and make decisions especially outside the laboratory. Anecdotally and informally such differences are apparent and traditionally these differences have been described in terms of personality traits and tendencies. Recently however computational models have been proposed and applied capable of modelling decision making at the level of the individual in terms of mathematically derived parameters that precisely, quantitatively and objectively capture such differences. This research project will focus on the application of techniques from machine learning and artificial intelligence to gather such data on user social and environmental contexts for the purposes of experimental exploration of user decision-making in natural settings. This is an open PhD topic and applicants are invited to explore and discuss the precise topic within this overall context of what can be called computational psychology. This is a multidisciplinary research topic and requires interaction with social scientists, computer scientists, mathematicians and psychologists. Candidates with an interest in behavioural psychology and cognitive science are likely to find the research particularly interesting. Further details will be explained during the two-way interview phase.

Eligibility:

An MEng in Computer/Electronic Engineering or a BSc or MSc Degree in Computer Science or Mathematics or other relevant discipline is expected but candidates with other backgrounds will be considered on a case-by-case basis.

English language requirements for non-native speakers of English is available here:

<https://www.dcu.ie/registry/english.shtml>

Essential Skills:

- Good mathematical skills
- Excellent communication skills, verbal and written (English)
- Computational modelling skills

Desirable skills:

- An interest in working with people from other disciplines
- R, Python
- Bayesian statistics

Stipend:

This is a 4 year fully funded structured PhD position with a stipend of €18,500 per year (tax-free, tuition fees paid).

Application:

Informal enquiries about this position can be made to: tomas.ward@dcu.ie

Application Procedure

All expressions of interest, to include

1. CV including relevant publications and contact details of 2 referees
2. 1 page cover letter detailing relevant experience and interest in this specific position (please check the list of essential and desirable skills in preparing this letter)
3. A copy of your undergraduate/postgraduate thesis report

in PDF only, are to be submitted by email to: Prof Tomás Ward - tomas.ward@dcu.ie

**Please clearly state the role that you are applying for in your application and email subject line:
1907 - PhD position, Understanding Human Decision Making through Machine Learning**

Interviews will be carried out Interviews will be carried out as soon as suitable candidates are identified..

Application End Date: 16th December 2019

Start Date: The position commences in early 2020 or when a suitably qualified candidate becomes available.

W: insight-centre.org