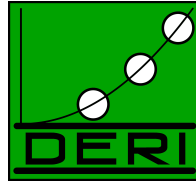




OÉ Gaillimh
NUI Galway



SFI-funded PhD Studentship at the Digital Enterprise Research Institute (DERI), NUI Galway

Dynamic Graph and Network Analysis

The SFI-funded Clique Strategic Research Cluster at the Digital Enterprise Research Institute (<http://www.deri.ie>) at NUI Galway (<http://www.nuigalway.ie>) invites applications for a funded PhD Studentship in Dynamic Network Analysis, Mining and Modelling.

The research cluster (<http://www.cliquecluster.org>) addresses the development of analytical, modelling and visualisation techniques for the analysis of large scale, dynamic graphs and networks. It is based at the DERI institute at NUI Galway and University College Dublin, and has industry partners like IBM.

The DERI group conducts fundamental algorithmic work as well as investigating and modelling the principles underlying the evolution and interactions in large social, communication and collaborative networks. Areas of interest include but are not limited to:

- Analysing roles that users play in social networks and designing efficient algorithms to find these [1];
- Analysing and modelling the interactions between online communities [2];
- Analysing how information and influence diffuses in networks and formulating predictive models for diffusion behaviour in social and collaborative networks;
- Designing efficient graph algorithms to find evolving communities with correlated change behaviour [3];
- Designing scalable, distributed, real-time algorithms to tackle problems in massive dynamic graph datasets.
- Real-time social media analytics
- Real time information personalisation

The successful candidate should have at least a bachelor's degree in computer science, maths, science or engineering, and have the pre-requisites for PhD studies at NUI Galway (<http://www.nuigalway.ie>). The PhD studentship covers academic fees and includes a generous stipend and travelling allowance for a three year period. In addition, the following criteria are desirable but not necessary:

- Familiarity with graph algorithms and theory (e.g., finding connected components efficiently);
- Familiarity with modelling and simulation;
- Familiarity with social network analysis;
- Familiarity with large-scale, distributed, dynamic data analysis (e.g., data streaming algorithms);
- Familiarity with data mining, feature selection and machine learning, especially graph mining and graph grammars;
- Masters or equivalent degree in graph analysis, modelling or social network analysis.

The successful candidate will work with the DERI Principle Investigator, Dr. Conor Hayes, and with Dr. Jeffrey Chan as part of the Clique Research Cluster at DERI, NUI Galway. There will also be extensive opportunities for collaboration with the other Clique PIs and with our industrial partners (<http://www.cliquecluster.org/content/people>). Interested applicants should send an application with the subject header CLIQUE_PhD_10 to conor.hayes@deri.org.

The application *must* contain the following: a CV, a one page statement explaining the candidate's interest in and compatibility with the objectives of the position and a list of referees. Applications that do not follow this format will not be considered. Closing date: May 30th, 2010.

[1] Jeffrey Chan and Conor Hayes, "Decomposing Discussion Forums using User Roles", in Proceedings of 2nd Web Science Conference 2010, USA, 2010.

[2] Marcel Karnstedt and Conor Hayes, "Towards Cross-Community Effects in Scientific Communities", in Knowledge Discovery, Data Mining and Machine Learning, 2009.

[3] Jeffrey Chan, James Bailey and Christopher Leckie, "Discovering correlated spatio-temporal changes in evolving graphs", in Knowledge and Information Systems, 16(1), 2008.