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From: dbworld-bounces@cs.wisc.edu on behalf of Conor Hayes [conor.hayes@deri.org]
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To: dbworld@cs.wisc.edu
Subject: [Dbworld] Funded PhD Studentship in Real-Time Analytics for Large-Scale Online Communities

Funded PhD Studentship in Real-Time Analytics for Large-Scale Online Communities

The Digital Enterprise Research Institute (DERI) at the National University of Ireland Galway is seeking applications for a funded PhD student position in Large-Scale Dynamic Network Analysis, Mining and Modelling. The successful candidate will join a research team in DERI at NUI Galway in a large EU-funded project focusing on Real-Time Analytics for Large-Scale Online Communities

The Research

Our research project focuses on developing scalable analytics of structure, behaviours and content in large on-line communities in order to predict risks and opportunities and thus make suitable suggestions for rapid action or intervention. Online communities represent valuable information ecosystems whose micro- and macro dynamics in terms of structure, information, behaviour are not well understood. Thus, they are vulnerable to risks and failure to capitalise on emergent opportunities. We are interested in developing techniques for measurement, management, analysis, protection and optimisation of the health and functionality of online communities. Existing approaches fail the challenges of scale and cannot cope with the imminent growth predicted for online communities. New techniques are required to cope with the scale of data management, the speed at which timely analysis and action is needed and the complexity of people's online behaviour. A major objective of the!

project is to combine risk management, community analysis and community forecasting in large scale to benefit individual users and businesses. The project consortium consists of European academic and industrial partners.

DERI Galway

DERI Galway (www.deri.ie) is one of the largest Semantic Web and Web Science organisations in the world. DERI's mission is to enable networked knowledge, globally interlinking information from the Web and the physical world. DERI's role in the project consortium is to produce a suite of novel, highly scalable analytical methods and tools for on-line communities. This requires to extract reusable, interpretable analytics in real time from the streams of dynamically, socially produced data from on-line communities. The group focuses on 4 non-disjoint dimensions: Structural Analysis, Behavioural Analysis, Content/Social-Semantic analysis, and Cross-community Analysis. The work will be achieved in close cooperation with other units and projects in DERI, as well as with the other partners from the project consortium.

Areas of Interest

These include but are not limited to:

- * Feature Selection and Merging to provide appropriate, tractable abstractions;
- * Graph theoretic analysis of communities in order to measure and understand emergent structural, communication, and behavioural characteristics;
- * Scalable methods for mining and matching behavioural motifs;
- * Techniques for detecting and tracking qualitative measurements of topic dynamics;
- * Uncovering and measuring how community structures and substructures influence each other;
- * Designing real-time algorithms for stream mining and cluster-based computing;

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 (www.nuigalway.ie), and must be fluent in English. The PhD studentship covers academic

fees, a generous monthly stipend and a research travel allowance for a three year period, as well as the use of DERI's facilities for experimentation and research.

Desireable Criteria

In addition, the following criteria are desirable but not necessary:

- * Familiarity with graph analysis and theory and with social network analysis;
- * Familiarity with large-scale, dynamic data analysis (e.g., data streaming algorithms);
- * Familiarity with data mining, feature selection and machine learning, especially graph mining and graph grammars;
- * Familiarity with parallel algorithm
- * Familiarity with modelling and simulation;
- * Masters or equivalent degree in a relevant discipline or topic;
- * Good programming skills and good English writing skills;

The successful candidate will join the project team led by DERI Principle Investigator, Dr. Conor Hayes in DERI, Galway. There will be extensive opportunities for collaboration with other researchers and with other research groups and projects in DERI and Europe, and with other world-wide institutes with whom DERI collaborates.

How to apply:

Interested applicants should send an application with the subject header UIMR_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
- * A list of (minimum two) referees
- * Additionally, publications and other materials that the student may be consider relevant
- as links to resources available online

Applications that do not follow this format will not be considered.

Closing date: Jul 5th, 2010.

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