

CNGL Undergraduate Students as Researchers Programme 2011 PROJECT DESCRIPTION

<i>Institution/Track:</i>	Located in Trinity College Dublin (DCM)
<i>Project Title:</i>	Personalised Movie Presentation – Movie Recommendation
<i>Suitable for students who are studying in the following areas:</i>	Computer Science Engineering Web Technologies Information Systems Linked Data / Ontologies Semantic Web Human Computer Interaction User Experience Design
<i>Skills needed:</i>	<p>This project would be suitable for a candidate with strong technical and programming skills, particularly with Java and Web technologies.</p> <p>The project will focus on the use of SPARQL, Ontologies and Personalisation; a familiarity with any of these would be desirable, but not required.</p>
<i>Project Description:</i>	<p>Digital media consumers worldwide have varied information needs, likes, preferences, skills, and have different means of media access. Adaptive Personalisation can help address this formidable obstacle to the unhindered availability of digital information.</p> <p>A Personalised Movie Presentation Portal has been developed in KDEG. The portal searches for movie recommendations based on an individual's opinion of what makes a good film. This internship will further develop the research that has been conducted in this area and build upon the existing platform. This platform was developed using RDF, SPARQL and XML technologies and is linked to other webbased services: LinkedMDB, IMDB, Rotten Tomatoes and Freebase.</p> <p>A user logs into the Movie Presentation Portal and informs the application of his/her preferences by selecting a list of movies which they like. A User Model is generated for the user.</p> <p>The LinkedMDB database contains millions of RDF triples with hundreds of thousands of RDF interlinks to other existing web data sources on the open data cloud, such as DBpedia and Yago, and references to related webpages. The genres associated with the movies selected by the user are extracted from LinkedMDB using SPARQL queries. These genres are then used to select a list of similar movies for presentation to the user.</p> <p>The Adaptive Engine combines the User Model, Adaptive Presentation Strategy and identified content to generate a personalised presentation template for the user. High quality sources of movie-related content such as IMDB, Rotten Tomatoes and Freebase are used to populate this personalised presentation for the user with information about the selected movies.</p>
<i>Who will be working with you?</i>	<p>Our undergraduate student will be working closely with three Post-Doctoral Research Fellows, Séamus Lawless, Ian O'Keeffe and Alexander O'Connor. S/he will also have the support of Prof. Vincent Wade.</p> <p>During their time with us, s/he will be part of a large research group and as such have the support of many postgrads and postdocs. The student will also be expected to attend any workshops or seminars that are held within the group.</p>
<i>The Role of the student & benefits gained from</i>	<p>The student will develop innovative functionality to improve the operation of the Movie Portal to incorporate a richer user experience based on a broader range of semantic data made available through the linked open data web. The student will</p>

participation in this project: ¹	<p>have extensive opportunities to experiment in the creation of effective personalised visualisations based on rich semantic data. The student will also have the opportunity to validate the movie recommender system on different semantic data, with the objective of defining key requirements for a future personalised linked data browser.</p> <p>The student will gain an intimate working knowledge of semantic web technologies including RDF, SPARQL and XML. They will become familiar with web-based personalisation. They will have the opportunity to participate in ongoing research into adaptive, web-based personalisation and will have an opportunity to participate in the creation of novel research systems that will be evaluated in user trials.</p> <p>The student will also gain substantial knowledge of personalised semantic visualisation and data modelling and the future of the data web.</p>	
Short description of the group:	<p>The Knowledge and Data Engineering Group (KDEG) comprises eight academic staff and over fifty research associates and postgraduate students. KDEG has established a strong reputation in the research of knowledge and semantic representation, adaptive portals for information analysis, educational systems, Adaptive Hypermedia systems and intelligent pedagogic systems. KDEG is a world leader in the area of knowledge driven personalisation and dynamic adaptation of digital content. Over the last fifteen years, the group has pioneered innovation in dynamic metadata-driven techniques for digital content retrieval, composition and automated customisation.</p>	
Recommended Reading Material:	<p>The Adaptive Web: Methods and Strategies of Web Personalisation, Lecture Notes in Computer Science, vol. 4321, Berlin: Springer Verlag, 2007. http://bit.ly/bbnckl</p> <p>Conlan, O., Wade, V., Bruen, C., Gargan, M., Multi-model, metadata driven approach to adaptive hypermedia services for personalized eLearning, Proceedings of Second International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems, Second International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems, Malaga, Spain, May 2002, 2002. http://bit.ly/9DFX5p</p>	
Other information:		
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¹ ***This is an initial description of the role of the student and it is liable to change following discussions between the investigators and the student.***