



PostDoc Job Opportunity



DUBLIN CITY UNIVERSITY	First Name	Last Name	email	Institute	Address
PI name & contact details:	Alan	Smeaton	Alan.Smeaton@dcu.ie	DUBLIN CITY UNIVERSITY	Glasnevin, Dublin 9, Ireland.
School:	Computing				
Research Centre/ group affiliation:	Insight Centre for Data Analytics				
Research group/ centre website:	www.insight-centre.org				

Brief summary of research group/ centre activity:

Insight is Ireland's largest single investment in research and focuses on applying data analytics solutions to problems in connected health, and in the discovery economy. In DCU we focus on analytics as applied to media of all kinds - text, image, video, sensor data, social networks, data from personal sensors and especially lifelogs. We work collaboratively across DCU's schools and Faculties and our research is multi-disciplinary in nature.

Description of postdoctoral project on offer:

Automatic analysis of the content of moving video is an essential step if we are to effectively manage large-scale video archives. In DCU we have built considerable expertise in using machine learning techniques to automatically analyse and index video archives based on their content. This is based around using training data which consists of many positive and negative example images for each of possibly hundreds of semantic concepts. This means we use hundreds of positive and negative examples for semantic concepts like road, tree, car, grass, house, TV screen, bicycle, fire, and so on, and we then use machine learning to distinguish between positive and negative instances of these concepts in video archives. The problem with scaling this approach is that the number of possible semantic concepts is huge, and the relationship between these concepts has yet to be successfully exploited. For example, car and road will often co-occur together, as will tree and grass, yet current approaches treat these as independently occurring concepts. This project will involve exploiting semantic relationships between co-occurring semantic concepts in video archives, with a view to improving both the range of semantic concepts, and their accuracy. Ultimately this will lead to more effective ways to access video archives based on content.

Please indicate the core skills or disciplines that are required for this position:

The applicant should have a background in information mining and information organisation, so information science, computer science, data science are all of relevance. Experience in using semantic web technologies would be an advantage but is not necessary.