2013 YCCSA SUMMER SCHOLARSHIP PROJECT SUBMISSION

This form is for prospective project supervisors to submit their projects to be included in the YCCSA Summer Scholarships Programme for 2013.

It is the purpose of the Summer School that any projects submitted are interdisciplinary in nature.

Date	7 March 2013
Main Supervisor's Name	Dr Stephen L. Smith
Main Supervisor's Department	Electronics
Co-supervisors' name(s) and Departments	Dr Mary Elizabeth (Betsy) Pownall – Department of Biology
Project Title	Characterising Symptoms of Parkinson's Disease by Analysing Optical Flow in Video using Evolutionary Algorithms
Project Description	Parkinson's disease is a chronic debilitating neurodegenerative disease that affects approximately 1 in 500 people. Two symptoms of Parkinson's disease are tremor and a slowing of movement called *bradykinesia,* which can be difficult to measure with confidence. This project will investigate the use of evolutionary algorithms for assessing these symptoms from video sequences of zebrafish with the disease. The video will be preprocessed using functions from the OpenCV computer vision library and extracted features then used to train the evolutionary algorithms to recognise the symptoms of interest.
Required skills	An interest in computer vision and good programming skills in either Java or C languages.
Project dates	Monday, 15 July 2013 to Friday, 13 September.
Other information	
References	S. L. Smith, P. Gaughan, D. M. Halliday, Q. Ju, N. M. Aly and J. R. Playfer, Diagnosis of Parkinson's disease using evolutionary algorithms, Genetic Programming and Evolvable Machines, 8(4):433 - 447, 1389-2576, 2007

When complete, please email the form to sarah.christmas@york.ac.uk