

## Project proposal template – Faculty studentships Summer 2014

<i>Project title</i>	Human and computer vision: a symbiotic approach	<i>Director of Study</i>	Paolo Remagnino
<i>Second Supervisor</i>	Barbara Pierscionek	<i>School</i>	Computing and Infor
<i>Other members of supervisory team</i>	Sabira Mannan, FASS	<i>Any requirements from applicant (eg degree in specific subject area)</i>	strong at programming and good level of mathematics.
<b>Project summary</b> <b>(max 1,000 characters)</b>			
<p>The human visual system is a complex interaction of ocular optics, muscle-mediated motion from both external and internal muscles, autonomous nervous system impulses, photochemical reactions and higher order visual processing. Computer vision endeavours to mimic the sophisticated human system by implementing algorithms to extract information from images and videos, attempting the detection and identification of objects and people in complex scenes and extracting movement information of dynamic scenes.</p> <p>We propose a novel combination study that directly links the human visual system with that of a computer. The symbiotic approach uses computer vision algorithms to study the human vision system (for instance studying how lighting, depth and motion cues) and the human vision system and its intricate processing is employed to improve current computer vision algorithms to detect and recognize stationary and dynamic scenes. Newly developed algorithms are used to utilise the salient features of detection, resolution and discrimination to design improved computer means of motion detection and tracking of individuals in complex scenes.</p>			