

QUB-CSC Scholarship PhD Project Proposal

2018-2019

Title: Design and development of a robot for eye surgery	
Project Description: <p>Over 60 million people in the world have eye impairment and need eye surgery. But only a few surgeons can do the operation properly, as it is complicated and challenging because the motion and force control of the operation tools driven by surgeon's hands is delicate. To make the surgery operation accessible to more people at an affordable cost, and with a final aim of implementing a robotic system for conducting the operations, this project is to design and develop a surgery robot. This project is collaborated with Cathedral Eye Clinic UK.</p>	
Key Skills Required for the post: <ul style="list-style-type: none">• A bachelor degree in Engineering (Mechanical/Aerospace Engineering, Manufacturing, Mechatronics, or relevant) with an overall average at 83% or above; or a master degree with an overall average at least 80%.• Knowledge of robot design, modelling and control considered as advantage• Knowledge of prototype of mechanical devices considered as advantage• Project management skills• Oral and written communication skills	
Key Transferable Skills that will be developed during the PhD: <ul style="list-style-type: none">– Innovative thinking in design and control of a medical robot– robot modelling and control method– Experimental methods for characterising the robot– Hands on skills on robot construction– Project and time management training to ensure milestones of the project are delivered.– Effective dissemination of research findings through presentation at international conferences and publication in high quality technical journals. Interpersonal skills within a multidisciplinary team including academics and industrialists	
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