

Joe Watson

Education

Technische Universität Darmstadt	<i>Darmstadt, Germany</i>	2018 - Present
Computer Science Ph.D.		
Researching Robotics & Machine Learning at the Intelligent Autonomous Systems Lab, supervised by Prof. Jan Peters		
Peterhouse, University of Cambridge	<i>Cambridge, UK</i>	2012 - 2017
Information & Computer Engineering MEng, BA (Hons) Distinction, First Class		
Modules include: Robotics, Computer Vision, Statistical Pattern Processing, Digital Filters & Spectrum Estimation, Nonlinear Systems & Control		
Jack Weinstock Prize for Electrical and Information Sciences (2016, 2017) Peterhouse Engineering College Prize (2015, 2016, 2017)		
Honours	Charles Babbage Senior Scholarship of Peterhouse (2015-2017)	2 nd Year Integrated Design Project Prize (2014)
	Engineering Professors' Council Essay Prize, Highly Commended (2013)	1 st Year Computing Prize (2013)

Experience

Software Engineer, CMR Surgical	Cambridge, UK	Autumn 2016 - Winter 2018
<ul style="list-style-type: none">• Worked on developing the novel robotic system designed to revolutionize laparoscopic surgery through to CE Mark accreditation• Focused on the Control and Signal Processing algorithms for the manipulators, through research, experimentation and software development using C and Python• Implemented software features for microcontroller subsystems of the product from requirements to tests• Contributed towards the technical documentation of the microcontroller subsystem, included the Technical Specification, Software Test Specification, Verification Test Specification, Software Risk Analysis		
Deep Learning for Robotic Grasping	University of Cambridge	2015-2016
<ul style="list-style-type: none">• Self-motivated 4th Year research project supervised by Dr. Fumiya Iida and assessed by Prof. Roberto Cipolla• Trained a Convolutional Neural Network for real-time grasp prediction and implemented it on a robotic system• Used Rethink Robotics' Baxter robot, Microsoft Kinect, ROS and Caffe. Graded First Class and published as a conference article		
The Technology Partnership (TTP Meteor)	Cambridge, UK	10 weeks, Summer 2015
<ul style="list-style-type: none">• Undertook an internal research project the industrial printing division of a technology consultancy• Research involved developing and investigating the use of system identification and machine learning algorithms in their products		

Publications

CONFERENCE ARTICLES

Watson, J., Hughes, J., Iida F. (2017) Real-World, Real-Time Robotic Grasping with Convolutional Neural Networks.
In *18th Towards Autonomous Robotic Systems (TAROS) Conference* link.springer.com/chapter/10.1007/978-3-319-64107-2_50

Skills

Programming Languages	Software Packages	Platforms
C, Python, MATLAB, C++	ROS, Pytorch, TensorFlow, OpenCV, Simulink	Windows, Linux
Version Control	General	
git, svn	LaTeX, Graphic Design (Adobe Photoshop, Illustrator, Indesign, Premier Pro), Fine Art	

Interests

Academic

Model-based Reinforcement Learning, Optimal Control Theory, Approximate Bayesian Methods, Generative Models

General

Silkscreen Printing, Post-capitalist economics, Epistemology of Information Technology, Cycling, Graphic Design

References available on request