

Education

Postgraduate

University of Edinburgh – PhD in [Neuroinformatics Doctoral Training Centre](#) part of the [School of Informatics](#) – September 2013 - (on-going)

- **Topic:** Dynamical system Markov chain Monte Carlo methods for probabilistic inference.
- **Primary supervisor:** [Amos Storkey](#)
- **Secondary supervisory:** [Peggy Seriès](#)

University of Edinburgh – [Neuroinformatics \(MSc by Research\)](#) – September 2012 - August 2013

- **Result:** Distinction
- **MSc Project:** *Insect olfactory landmark navigation* - study into whether insects may be able to use bilateral olfactory sensation of the odours dispersing from fixed sources in their environment to aid in navigation.
- **Key topics:** Principles of Neuroscience, Neuroinformatics Research, Neural Computation, Neural Information Processing, Probabilistic Modelling and Reasoning, Computational Cognitive Neuroscience.

Undergraduate

University of Cambridge – [Information and Computer Engineering \(MEng\)](#) – October 2008 - June 2012

- **Results:** First-Class Honours (Part IIA) / Distinction (Part IIB)
- **MEng Project:** *Measuring tissue stiffness using ultrasound* - research into techniques for estimating absolute stiffness at a small set of points in an ultrasound image plane by tracking shear wave propagation through tissue using standard ultrasound imaging hardware.
- **Key topics:** Systems and Control, Signal Processing, Software Engineering, Computer and Network Systems, Medical Imaging, Signal Detection and Estimation, Pattern Recognition, Computer Vision, Machine Learning, Optimisation Methods.

Experience

Industrial

[Granta Design](#) (Cambridge) – Junior software engineer – July 2010 - September 2010

- Summer internship in a materials information software firm based in Cambridge.
- Gained experience of working in a development team and of good software engineering practice.

[Mott MacDonald](#) (Newcastle) – Engineering assistant – August 2007 - August 2008

- *Year in Industry* placement within regional office of large civil engineering and development consultancy.
- Worked within both water infrastructure and electrical building services teams.

Research

University of Cambridge – Research assistant – July 2011 - September 2011

- [Undergraduate research project](#) based in Cambridge University Engineering Department.
- Explored the use of technology in supporting the delivery of mental health care.

Teaching and outreach

STEMnet Scotland – [STEM Ambassador](#) – September 2014 - (ongoing)

- Role to encourage participation and enjoyment of STEM (Science Technology Engineering Mathematics) subjects by young people.
- Currently regular volunteer at local secondary school as tutor for Advanced Higher Mechanics course through STEM ambassador scheme.

University of Edinburgh – Teaching support – January 2014 - (ongoing)

- Tutored for Informatics courses *Probabilistic Modelling and Reasoning* (2014–2016) and *Information Theory* (2015).
- Marker for Informatics course *Machine Learning and Pattern Recognition* (2014–2015).
- Demonstrator for Informatics course *Machine Learning Practical* (2015).
- Teaching assistant for Informatics course *Probabilistic Modelling and Reasoning* (2016).

School placements – January - March 2010 & January - March 2011

- Placement through *STIMULUS* scheme which pairs undergraduate students with local schools to assist in teaching STEM subjects.

nRICH Educational resource development – July 2009 - August 2009

- Summer project with educational charity *nRICH*, which promotes the teaching and learning of mathematics.

CUED outreach – October 2008 - June 2012

- Regular volunteer with Cambridge University Engineering Department *outreach scheme*, assisting in workshops aimed at encouraging young people to consider engineering careers.

Personal projects

Kaggle – *National Science Data Bowl competition* - December 2014 - March 2015

- Competed as part of team of PhD students in image classification competition: task was to predict plankton type present in small unlabelled grayscale images given a labelled training dataset with examples of the 121 different class types.
- Developed a solution using a combination of features learned using deep convolutional networks and classic computer vision feature detectors.
- Gained experience in working with large inhomogeneous datasets, using GPU parallelisation to speed up data processing and working collaboratively as part of a team.
- Team finished *57th out of 1049 entrants*.

Skills

Languages

- English - native.
- German - intermediate (GCSE plus two 8 week *intermediate level courses*).
- Chinese - beginner (two 10 week *beginner level courses*).

Programming

python Main day-to-day language in PhD project, strong proficiency in use for scientific computing and data processing tasks with particular experience of using *numpy*, *scipy*, *matplotlib*, *pandas*, *theano* and *pylearn2* libraries.

MATLAB Familiar with use for scientific computing and data processing tasks through use in undergraduate and postgraduate course assignments and more recent use as part of teaching support role.

C# Main language used during summer internship at Granta Design and during summer undergraduate research project, familiar with use for processing XML data files and developing MVC applications using WPF. Limited recent experience.

C++ Language taught as part of undergraduate degree and used during undergraduate Masters' project. Limited recent experience.

Miscellaneous

- Trained first aider (*BASP* Outdoors Emergency First Aid, last updated November 2015).
- Full UK driving licence.