# Kevin Wenliang Li

kevinli@gatsby.ucl.ac.uk +86-138-1183-6480

## *Education*

**University College London, Gatsby Computational Neuroscience Unit, PhD candidate** **2015 – present**

- Supervised by Maneesh Sahani (primary) and Peter Dayan (secondary)
- Projects include perceptual learning, statistical inference and neural implementation, kernel methods

**University of Cambridge, Trinity College** Information and Computer Engineering **2010 - 2015**

- Integrated B.A. (1st Hon.) and M.Eng. (Exceptional), scholarship £18,510 p.a. for 4 years, College Senior Scholar
- Ranked in top 10 among ~300 students for 1st, 2nd and 4th years, Product Design Competition price winner
- Classes: Pattern Processing, Adv. Communication and Coding, Optimisation, Computer Vision, Machine Learning, Speech and Language Recognition, Computational Neuroscience
- 4th Year Project: building a statistical model for large population neurons using Hidden Markov Model. Given the neural spike trains, infer the hidden neural membrane potential assumed density filtering & smoothing. Learning the model parameters using the EM algorithm, direct optimisation and a novel iterative method. The model consists of a two-layer HMM with discrete and continuous latent variables. Supervised by Dr Máté Lengyel
- Fully funded PhD offers: UCL Gatsby Comp. Neurosci., Oxford Stats., Cambridge Comp. & Bio. Learning in 2014

**Massachusetts Institute of Technology (1 Year undergraduate exchange)** **2012 - 2013**

- GPA: 4.9/5.0, Cambridge-MIT Exchange in Electrical Engineering and Computer Science. Lab Assistant
- Classes: Algorithm, Computer Structure, Applied Probability, Signal Processing, Communication and Control
- Digital Image Project: Grade A+, shadow removal, more effective than published methods, taught by Prof Jae Lim
- Complex Network Project: Grade A, a model of spread of public interest, taught by Prof D. Gamarnik

## *Experience*

**Tsinghua University**

**Research Intern,** supervised by Prof Funchun Sun at National Key Lab of Intelligent Systems **Dec 2014 – present**

- Collaborated with post-doc on planning human-like grasps for variety objects, paper submitted to IROS
- Proposed non-parametric 3D object representation effective for identification and part segmentation
- Achieved human-like grasps on a variety of complex objects rarely attempted in the literature at fast speed

**Microsoft Research Cambridge** **July - Oct 2014**

**Research Intern,** supervised by Sebastian Nowozin (Machine Learning & Perception Group)

- Researched and developed an algorithm and a tool that extracts complex road networks from satellite images
- Designed features for pixel and road classification, built a spatial marked point process model of line segments to impose spatial constraints with novel interaction potential functions, ran MCMC with novel proposals distributions, learned parameters using pseudo-likelihoods, made single decision using scoring and min. expected loss
- Wrote paper with supervisors for publication, tool to be demoed at conferences, MS hackathon prize winner

**Microsoft Asia R&D** **Jun - Aug 2013**

**Program Manager Intern**, Commerce Billing team

- Collaborated with managers from Shanghai and Redmond, led a feature team of three interns to carry out tasks/features, set deliverables and milestones for a large project, reported progress to non-technical clients
- Developed a monitoring system for the commerce pay-out service using SSRS and Excel PivotTable, final product enabled system exception tracking, faster incident reaction and more informative customer service

**MIT Jensen Research Group** **Jan - May 2013**

**Undergraduate researcher**, embedded system in C/C++ for automated chemical process

- Object-oriented programming on Arduino microprocessor, treating processes and physical components as objects
- Designed the control signal circuit for all mechanical components including switches, pumps, flow meters, SD Card reader, buttons and a LCD screen using innovative layout and control algorithms

**Swiftkey** (software start-up, applications topping Android Market) **Jul - Sept 2011**

**Language Processing Engineer Intern,** concentrated on Asian languages using C++ and Ruby

- Led non-whitespace (CJK) languages research of the company, programmed a Chinese input prototype capable of Pinyin input and next-word prediction based on input context using the Swiftkey's engine
- Invented and implemented a Chinese Pinyin tokenisation algorithm and a CJK character sequencing algorithm

## *Skills*

- **Programming:** C/C++, Python, Julia, MatLab, Ruby, HTML/CSS, JavaScript, SQL
- **Languages**: English – fluent Mandarin – native Trained in English-Chinese translation and interpretation

## *Leadership Activities*

**Cambridge University Consulting Initiative** ~15 Members **Aug 2013 - May 2014**

**Founder and President**, provided technical and management consulting to university student societies

**MIT Club for Chinese Undergraduates**, ~100 members **Jan - May 2013**

**Co-President**, invited by the executive board for organisational reform and transition

**Other societies include CU Chinese Orchestra, CU Mandarin Debating Society, MIT Asian Dance Team, etc.**