

Li Kevin Wenliang

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Education

Gatsby Computational Neuroscience Unit, University College London, PhD candidate 2015 – 2020

- ♦ Supervised by **Prof. Maneesh Sahani** (primary) and **Prof. Peter Dayan** (secondary)
- ♦ **PhD Thesis: supervised enhancement in computational and biological representation of distributions**
 - State-space models: inference and learning of nonlinear exponential family models
 - Deep kernel exponential family density estimator fit by score matching
 - Representation of uncertainty in neural networks trained with supervision
 - Human perception as inference: theory on how the brain may encode uncertainty in the environment
 - Amortised learning: maximum likelihood learning of latent variable models without inference
- ♦ **Other research:** Perceptual learning modelled by deep neural networks and Bayesian inference

University of Cambridge, Trinity College Information and Computer Engineering 2010 - 2014

- ♦ B.A. (1st Hon.) and M.Eng. (Distinction), scholarship £18,510 p.a. for 4 years, College Senior Scholar
- ♦ Ranked within top 10 of the year for 1st, 2nd and 4th years (3rd year at MIT)
- ♦ Thesis: inference and learning on nonlinear state space model for neural spiking data, **Prof. Máté Lengyel**

Massachusetts Institute of Technology 2012 - 2013

- ♦ GPA: 4.9/5.0, Cambridge-MIT Exchange in Electrical Engineering and Computer Science.

Publications

- Li Wenliang, ..., **Sahani**, Amortised learning by wake-sleep, submitted
- Li Wenliang, **Sahani**, Plausible model for online recognition and postdiction in dynamic environment, NeurIPS 19
- Li Wenliang*, D. Sutherland*, ..., **Arthur Gretton**, *Learning deep kernels for exp. fam. densities*, ICML, 19.
- Li Wenliang, ..., **Sahani**, *Accurate and adaptive recognition in dynamic environment*, COSYNE, 2019 (top 6%)
- Li Wenliang, ..., **Aaron Seitz**, *Deep neural network for modelling visual perceptual learning*, J. of Neurosci., 18
- Li Wenliang, **Sahani**, Neural network represents uncertainty by nonlinear moments, in prep, COSYNE, 18
- C. Liu, Wenliang Li, et al., *Grasp planning by human experience on objects with complex geometry* (IROS), 15

Experience

UCL/DeepMind PhD workshop, talk 2019

Machine Learning Summer School, teaching assistant 2019

Brains, Minds and Machines Summer School Aug 2016

Project: human perception of object stability, with **Prof Josh Tenenbaum**

Illume Research Dec 2016 – present

Mentor, part-time, teaching elementary machine learning and programming to high school students

Tsinghua University

Research Intern, with **Prof Funchun Sun** at Lab of Intelligent Systems Dec 2014 – Mar 2015

- ♦ Non-parametric 3D object representation effective for identification and part segmentation

Microsoft Research Cambridge July - Oct 2014

Research Intern, with **Dr. Sebastian Nowozin** (Machine Learning & Perception Group)

- ♦ Complex road networks recognition from satellite images of forests by marked point process

Other experiences

- ♦ Microsoft R&D Shanghai (2013), program manager in commerce platform
- ♦ Swiftkey (2011), research intern in natural language processing for non-whitespace languages

Skills

- ♦ **Programming:** Python (TensorFlow, PyTorch, Caffe), Julia, MatLab, C/C++, Ruby, HTML/CSS, JavaScript
- ♦ **Languages:** English – fluent Mandarin – native