Li Kevin Wenliang

kevinli@gatsby.ucl.ac.uk   kevin-w-li.github.io   GCNU 25 Howland St, London, W1T 4JG   +44 7531-143-552

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: dynamic inference using distributed representation of uncertainty**
  - o State-space models: inference and learning of exponential family conditionals
  - o Representation of uncertainty in neural networks trained with supervision
  - o Human perception as inference: theory on how the brain may encode uncertainty in the environment
- ◆ **Other research: density estimation and biological perception**
  - o Deep kernel exponential family density estimator trained using score matching
  - o 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, **M. Sahani**, Plausible model for online recognition and postdiction in dynamic environment, NeurIPS 19

Li Wenliang*, D. Sutherland*, H. Strathmann, **A. Gretton**, *Learning deep kernels for exp. fam. densities*, ICML, 19.

Li Wenliang, E. Vertés, **M. Sahani**, *Accurate and adaptive recognition in dynamic environment*, COSYNE, 2019 (top 6%)

Li Wenliang, **A. Seitz**, *Deep neural network for modelling visual perceptual learning,* J. of Neurosci., 18

Li Wenliang, **M. 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 presenter   **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