Kristopher Torp Jensen

University of Cambridge
Computational and Biological Learning Lab

ktj21@cam.ac.uk
Jesus College, Cambridge UK

Education

2019 - present **PhD Computational Neuroscience**
University of Cambridge
Supervisor: Dr Guillaume Hennequin
Analysis and modelling of neural circuit dynamics.

2018 - 2019 **MPhil Computational Biology**
University of Cambridge & Harvard Center for Brain Science
Dissertation: "Long-Term Stability of Neural Dynamics Underlying Stereotyped Behavior"
Result: Distinction (89.1/100; 1st of 19 students)

2015 - 2018 **BA Natural Sciences**
University of Cambridge
Specialization: Molecular Biology & Theoretical Chemistry
Result: First Class Honors (82.7/100; 1st of 112 students)

Research

2019 - present **Harvard Center for Brain Science**
Supervisor: Professor Bence Ölveczky
Analysis of the neural stability of motor memories from extracellular recordings.

2018 - 2019 **Janelia Research Campus**
Supervisor: Professor Vivek Jayaraman
Analysis of EM & RNAseq data and biophysical modelling of the fly central complex.

2017 - 2018 **Cambridge Centre for Computational Chemistry**
Supervisor: Dr Alex Thom
Development of a HF-based method for *in silico* modelling of electron transfer reactions.

2016 - 2017 **Aarhus University Department of Biomedicine**
Supervisor: Dr Yonglun Luo
Investigation of factors affecting the efficiency of CRISPR/Cas9 for genome editing.

Teaching

Neuromatch Academy
2021 Teaching Assistant – Computational neuroscience

University of Cambridge
2020 - 2021 Supervisor (Teaching Assistant) – Mathematical biology (3rd year undergraduate course)
2018 - 2020 Supervisor (Teaching Assistant) – Theoretical chemistry (3rd year undergraduate course)

Invited Talks

2021 **MIT Brain and Cognitive Sciences tutorial**
Learning what we know and knowing what we learn: GP priors for neural data analysis

2021 **Ölveczky lab (Harvard)**
Scalable Bayesian GPFA

2021 **Cambridge Engineering Division F Conference**
Manifold GPLVMs for discovering non-Euclidean latent structure in neural data

Awards

Fellowships & scholarships

2019 - present Cambridge Gates Scholarship
2016 - 2019 Scholar of Magdalene College, Cambridge
2018 Janelia Undergraduate Scholar
2015 *British Chamber of Commerce in Denmark* Scholar

Prizes

2018 GWHP Memorial Prize for best performance in undergraduate chemistry
Gill, Bundy & B.C. Saunders prizes for excellence in university examinations
BP Prize for the best performance in practical chemistry
2017 BP Prize for the best performance in theoretical chemistry
Keilin Prize for excellence in university examinations
2016 B.C. Saunders Prize for excellence in university examinations
2015 First place – The Danish National Science Fair (life science)
2014 & 2015 Silver medal – The International Chemistry Olympiad
First place – The Scandinavian Chemistry Olympiad

Publications

2021 **Kristopher T. Jensen***, Ta-Chu Kao*, Jasmine T. Stone, and Guillaume Hennequin.
Scalable Bayesian GPFA with automatic relevance determination and discrete noise models.
bioRxiv.

2021 Ta-Chu Kao*, **Kristopher T. Jensen***, Alberto Bernacchia, and Guillaume Hennequin.
Natural continual learning: success is a journey, not (just) a destination. *arXiv*.

2020 **Kristopher T. Jensen**, Ta-Chu Kao, Marco Tripodi, and Guillaume Hennequin.
Manifold GPLVMs for discovering non-Euclidean latent structure in neural data.
Advances in Neural Information Processing Systems.

2020 Daniel B. Turner-Evans, **Kristopher T. Jensen***, Saba Ali*, Tyler Paterson*, Arlo Sheridan*, Robert P. Ray, Tanya Wolff, Gerald M. Rubin, Davi D. Bock, and Vivek Jayaraman.
The neuroanatomical ultrastructure and function of a biological ring attractor. *Neuron*.

2018 **Kristopher T. Jensen**, Raz L. Benson, Salvatore Cardamone, and Alex J. W. Thom.
Modeling electron transfers using quasidiabatic Hartree-Fock states.
Journal of Chemical Theory and Computation.

2018 **Kristopher T. Jensen**, Lasse Fløe, Trine S. Petersen, Jinrong Huang, Fengping Xu, Lars Bolund, Yonglun Luo, and Lin Lin.
Chromatin accessibility and guide sequence secondary structure affect CRISPR-Cas9 gene editing efficiency. *FEBS Letters*.

Conferences

2021 **Computational and Systems Neuroscience (Cosyne)** *(poster)*.
Beyond the Euclidean brain: inferring non-Euclidean latent trajectories from spike trains.

2020 **From Neuroscience to Artificially Intelligent System** *(poster)*.
Self-supervised learning for multisensory integration in biologically inspired networks.

2020 **Bernstein Conference** *(contributed talk)*.
mGPLVM – Beyond the Euclidean brain.

2018 **Janelia Undergraduate Scholars Symposium** *(poster)*.
Angular velocity integration in *Drosophila melanogaster*.

Programming

Python (PyTorch, Jax, TensorFlow), Julia (Zygote, Flux), R, Matlab.

Reviewing

Nature Neuroscience, Neuron, Nature Methods, Nature Communications, Current Biology