Mufeng Tang

MRC Brain Network Dynamics Unit, University of Oxford
OX1 3TH Oxford, UK mufeng.tang@ndcn.ox.ac.uk

EDUCATION

University of Oxford Oxford, UK
DPhil (PhD) Computational Neuroscience *2021 - 2025 (expected)*
Supervisors: Prof. Rafal Bogacz and Prof. Helen Barron
Topic: Neural network models of **memory**, **prediction** and **navigation** in the brain.

University of Chicago Chicago, IL
MS Statistics, **GPA:3.8/4.0** *2019 - 2021*

University College London London, UK
BASc Science and Engineering, **First Class Honours** *2016 - 2019*

PUBLICATIONS/PREPRINTS

Tang M., Barron H., and Bogacz R., 2023. "Sequential memory with temporal predictive coding". **arXiv**. [URL] [Code]

Millidge B., **Tang M.**, Osanlouy M., and Bogacz R., 2023. "Predictive coding networks for temporal prediction.". **bioRxiv**. [URL] [Code]

Tang M., Salvatori T., Millidge B., Song Y., Lukasiewicz T., and Bogacz R., 2023. "Recurrent predictive coding models for associative memory employing covariance learning". **PLOS Computational Biology**. [URL] [Code]

Tang M., Yang Y., and Amit Y., 2022. "Biologically plausible training mechanisms for self-supervised learning in deep networks". **Frontiers in Computational Neuroscience**. [URL] [Code]

REFEREED CONFERENCE ABSTRACTS

Millidge B., **Tang M.**, Osanlouy M., and Bogacz R., 2023. "Predictive coding networks for temporal prediction.". In: **Cognitive Computational Neuroscience (CCN). (Oral presentation)**

Li T., **Tang M.**, and Bogacz R., 2023. "Modelling novelty detection in the cortex with predictive coding". In: **Cognitive Computational Neuroscience (CCN)**.

Tang M., Salvatori T., Millidge B., Song Y., Lukasiewicz T., and Bogacz R., 2022. "Associative memory via covariance-learning predictive coding networks". In: Memory in Artificial and Real Intelligence Workshop at the **36th Conference on Neural Information Processing Systems (NeurIPS).** [URL]

AWARDS AND SCHOLARSHIPS

University of Oxford, **St Cross E.P. Abraham Scholarship £15,000/annum** *Sep 2021*
University of Chicago, **scholarship for academic excellence $5540/quarter** *July 2020*
University of Chicago, **scholarship $4610/quarter** *July 2019*

INVITED TALKS

Neural & Machine Learning Group, University of Bristol. *June 2023*
Group of Machine Learning Research, Jagiellonian University. *May 2023*

COMPETITIONS

ASHRAE Great Energy Predictor, **Silver Medal** (among 3,600 teams)
Kaggle Competition *Dec 2019*

RESEARCH EXPERIENCE

Grossman Center for Quantitative Biology and Human Behavior Chicago, IL
Research Intern *Aug 2020 - Dec 2021*
Advisor: Prof. Jason MacLean
Topic: Spiking neural network models for the neocortex.

University of Chicago, Department of Statistics Chicago, IL
Student Researcher *June 2020 - Sep 2021*
Advisor: Prof. Yali Amit
Topic: Biologically plausible self-supervised deep learning models for the visual system.

UCL Centre for Advanced Spatial Analysis London, UK
Undergraduate Researcher *Oct 2018 - June 2019*
Advisor: Prof. Steven Gray
Topic: Semantic analysis of geo-tagged Twitter contents to inform congested areas in London.

INDUSTRIAL EXPERIENCE

DH Ready London, UK
Part-time Consultant *Oct 2018 - May 2019*
Achievements: Researched the impact of digital devices on human cognitive biases and authored a consulting report to identify cognitive biases in corporates' decision-making processes.

TEACHING EXPERIENCE

Supervisor of MSc projects at University of Oxford *Winter 2022*
MSc Mathematics Thesis Project

Teaching assistant at University of Chicago *Spring 2021*
STAT25025 Machine Learning and Large-scale Data Analysis