

ROMAN POGODIN

Mila and McGill, Montreal, Canada \diamond roman.pogodin@mila.quebec \diamond roman-pogodin.com \diamond [Github](#) \diamond [Google Scholar](#)

CURRENT ROLE

Postdoc in Theoretical/Computational Neuroscience

2023 - present

Mila and McGill, Montreal, QC, Canada (Supervisors: Prof. Blake Richards and Prof. Guillaume Lajoie)

EDUCATION

PhD Theoretical Neuroscience

2017 - 2023

Gatsby Computational Neuroscience Unit, University College London, London, UK (Supervisor: Prof. Peter Latham)

BSc Applied Mathematics and Physics (Honours)

2013 - 2017

Department of Control and Applied Mathematics, Moscow Institute of Physics and Technology, Moscow, Russia

TEACHING

Neuromatch Academy (2024) Content creator for the NeuroAI course

Neuromatch Academy (2020) Teaching assistant for the Computational Neuroscience course

Gatsby Computational Neuroscience Unit, UCL (2018-2019) Teaching assistant (graduate-level courses):

- Systems and Theoretical Neuroscience
- Approximate Inference and Learning in Probabilistic Models (COMPGI16)
- Probabilistic and Unsupervised Learning (COMPGI18)

OTHER ACADEMIC ACTIVITIES

- Co-organizer of the “The geometry & dynamics of learning: Bridging analytical and experimental insights into neural representations” [workshop](#) at COSYNE 2024
- Reviewer for NeurIPS 2021-2024, ICLR 2022-2025, ICML 2022-2024, eLife, PLOS CB, COSYNE 2024-2025

SELECTED PUBLICATIONS

Brain-like learning with exponentiated gradients

Jonathan Cornford*, **Roman Pogodin***, Arna Ghosh, Kaiwen Sheng, Brendan Bicknell, Olivier Codol, Beverley A Clark, Guillaume Lajoie, Blake Richards, bioRxiv preprint’24

Practical Kernel Tests of Conditional Independence

Roman Pogodin, Antonin Schrab, Yazhe Li, Danica J Sutherland, Arthur Gretton, arXiv preprint’24

Synaptic Weight Distributions Depend on the Geometry of Plasticity (spotlight at ICLR 2024)

Roman Pogodin*, Jonathan Cornford*, Arna Ghosh, Gauthier Gidel, Guillaume Lajoie, Blake Richards, ICLR’24

Efficient conditionally invariant representation learning (notable top 5% at ICLR 2023)

Roman Pogodin*, Namrata Deka*, Yazhe Li*, Danica J Sutherland, Victor Veitch, Arthur Gretton, ICLR’23

Self-supervised learning with kernel dependence maximization

Yazhe Li*, **Roman Pogodin***, Danica J Sutherland, Arthur Gretton, NeurIPS’21

Towards biologically plausible convolutional networks

Roman Pogodin, Yash Mehta, Timothy Lillicrap, Peter Latham, NeurIPS’21

Kernelized information bottleneck leads to biologically plausible 3-factor Hebbian learning in deep networks

Roman Pogodin, Peter Latham, NeurIPS’20

On First-Order Bounds, Variance and Gap-Dependent Bounds for Adversarial Bandits

Roman Pogodin, Tor Lattimore, UAI’19