

# Roman Pogodin, CV

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## Education

2017 – 2023	MPhil/PhD Theoretical Neuroscience University College London, London (UK) Gatsby Computational Neuroscience Unit
2013 – 2017	BSc Applied Mathematics and Physics (Honours) Moscow Institute of Physics and Technology (State University), Moscow (Russia) Department of Control and Applied Mathematics

## Research

February 2023 – present	McGill/Mila, Blake Richards' lab PostDoc
April 2018 – January 2023	Gatsby Unit, UCL, research group of Prof. Latham PhD student
November 2018 – February 2019	DeepMind, collaboration with Tor Lattimore Breadth rotation (part of PhD)
September 2016 – August 2017	Skoltech, research group of Prof. Maximov Research intern at Center for Energy Systems
July 2016 – August 2016	Summer Research Program, EPFL, Prof. Gerstner's lab Summer intern in computational neuroscience
January 2016 – July 2016	MIPT, under the guidance of Dr. Grudinin Course project
July 2015 – September 2015	Amgen Scholars Program, LMU Munich, Prof. Leibold's lab Summer intern in Computational Neuroscience

## Teaching

July 2020	Neuromatch Academy (online school in computational neuroscience) Teaching assistant
September 2018 – March 2019	Gatsby Unit, UCL Teaching assistant Probabilistic and Unsupervised Learning (COMPGI18) Approximate Inference and Learning in Probabilistic Models (COMPGI16) Systems and Theoretical Neuroscience

## Other

February 2022 – September 2022	SCGB Undergraduate Research Fellowship (SURF Program) Co-supervisor (with Grace Lindsay) of Andrada-Maria Marica Work presented at Bernstein 2022 (poster) and Neuromatch Conference 2022 (short talk)
September 2016 – present	MIPT office for international internships Helping undergraduate students at MIPT with internship applications; administrating a scientific internships group (>7.5k members) and a chat (>2.5k members)
September 2016 – June 2017	Yandex School of Data Analysis, Moscow (Russia) Master's-level courses in computer science and data analysis
February 2014 – June 2015	MIPT volunteering team Leader of a group working with an orphanage in Moscow

- Paper reviewing: eLife, PLOS Computational Biology, NeurIPS 2021-2023, ICLR 2022-2024, ICML 2022-2023
- Programming: Python (including PyTorch, JAX), C, C++, Matlab
- Languages: English (C1/Advanced), Russian (C2/Native speaker)

## Papers

June 2023	<a href="#">Google Scholar link</a> *Equal contribution Synaptic Weight Distributions Depend on the Geometry of Plasticity <b>R. Pogodin*</b> , J. Cornford*, A. Ghosh, G. Gidel, G. Lajoie, B. Richards preprint arXiv:2305.19394
December 2022	Efficient Conditionally Invariant Representation Learning <b>R. Pogodin*</b> , N. Deka*, Y. Li*, D. J. Sutherland, V. Veitch, A. Gretton In Proceedings of the International Conference on Learning Representations (ICLR) 2023 Accepted as <b>notable-top-5%</b>
March 2022	Locally connected networks as ventral stream models <b>R. Pogodin</b> , P. E. Latham 1st Brain-Score Workshop (BSW 2022)
June 2021	Towards Biologically Plausible Convolutional Networks <b>R. Pogodin</b> , Y. Mehta, T. P. Lillicrap, P. E. Latham In Proceedings of the Advances in Neural Information Processing Systems (NeurIPS) 2021
June 2021	Self-Supervised Learning with Kernel Dependence Maximization Y. Li*, <b>R. Pogodin*</b> , D. J. Sutherland, A. Gretton In Proceedings of the Advances in Neural Information Processing Systems (NeurIPS) 2021
June 2020	Kernelized information bottleneck leads to biologically plausible 3-factor Hebbian learning in deep networks <b>R. Pogodin</b> , P. E. Latham In Proceedings of the Advances in Neural Information Processing Systems (NeurIPS) 2020
December 2019	Working memory facilitates reward-modulated Hebbian learning in recurrent neural networks <b>R. Pogodin</b> , D. Corneil, A. Seeholzer, J. Heng, W. Gerstner NeurIPS 2019 workshop Real Neurons & Hidden Units: future directions at the intersection of neuroscience and AI
July 2019	On First-Order Bounds, Variance and Gap-Dependent Bounds for Adversarial Bandits <b>R. Pogodin</b> , T. Lattimore In Proceedings of the Conference on Uncertainty in Artificial Intelligence (UAI) 2019
October 2017	Efficient rank minimization to tighten semidefinite programming for unconstrained binary quadratic optimization <b>R. Pogodin</b> , M. Krechetov, Y. Maximov In Proceedings of the 55th Annual Allerton Conference on Communication, Control, and Computing (Allerton)
September 2016	Quadratic Programming Approach to Fit Protein Complexes into Electron Density Maps <b>R. Pogodin</b> , A. Katrutsa, S. Grudinin In Proceedings of Information Technologies and Systems 2016

## Talks

October 2023	Allen Institute for Neural Dynamics seminar
October 2023	UNIQUE scientific retreat
October 2023	NeuroAI Montreal (short talk)
October 2023	Canadian Computational Neuroscience Spotlight v4 (trainee talk, online)
June 2021	Tricentre meeting (Gatsby Unit, Columbia University and Hebrew University, online)
March 2020	Theoretical Neuroscience Journal Club at CNBC CMU, Pittsburgh
November 2019	DeepMind/UCL PhD Workshop, London

## Honors and awards

2022-2023	NeurIPS 2023 Top Reviewers NeurIPS 2022 Top Reviewers
September 2016 – December 2016	Increased State Academic Scholarship for research achievements
February 2014 – June 2016	Abramov fund scholarship for best non-senior students