Roman Pogodin, CV

email: roman.pogodin.17@ucl.ac.uk
web: http://roman-pogodin.com/
github: https://github.com/romanpogodin

Education

2017 – present
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
Average Grade: 8.8/10

Research experience

April 2018 – present
Gatsby Unit, UCL, research group of Prof. Latham
PhD student

Topics: associative memory models, biologically plausible deep learning

November 2018 – February 2019
Google DeepMind, collaboration with Tor Lattimore
Breadth rotation student

Topic: adaptivity in adversarial bandits

September 2016 – August 2017
Skoltech, research group of Prof. Maximov
Research intern at Center for Energy Systems

Topic: non-convex optimization

July 2016 – August 2016
Summer Research Program, EPFL, Prof. Gerstner's lab
Summer intern in computational neuroscience

Topic: generating long-time sequences from structured neural networks

January 2016 – July 2016
MIPT, under the guidance of Dr. Grudinin
Course project

Topic: optimization in application to structural biology

July 2015 – September 2015
Amgen Scholars Program, LMU Munich, Prof. Leibold's lab
Summer intern in Computational Neuroscience

Topic: simulation models of path planning in the hippocampal-cortical network

Teaching

July 2020
Neuromatch Academy (online school in computational neuroscience)
Teaching assistant

Responsibilities:
tutorials and project advice for a group of 10 students,
Q&A sessions in a larger group

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
Responsibilities:
tutorials, marking, coordination of the Gatsby TAs,
creating assignments for the theoretical neuroscience course

Other

September 2016 – June 2017
Yandex School of Data Analysis, Moscow (Russia)
Department of Computer Science
Master's-level courses in computer science and data analysis

September 2016 – March 2017
MIPT office for international internships
Team member
Data collection and work with students

February 2014 – June 2015
MIPT volunteering team
Group leader
Work with an orphanage

Skills

- Programming
  Python (including PyTorch), C, C++, Matlab
- Other
  Linux-based OS, LaTeX, Mathematica
- Languages
  English C1 (Advanced, TOEFL iBT score 103)
  Russian C2 (Native speaker)

Papers

Google Scholar link

June 2020
Kernelized information bottleneck leads to biologically plausible 3-factor Hebbian learning in deep networks
R. Pogodin, P. E. Latham
arXiv preprint arXiv:2006.07123

July 2019
On First-Order Bounds, Variance and Gap-Dependent Bounds for Adversarial Bandits
R. Pogodin, 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
R. Pogodin, 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
R. Pogodin, A. Katrutsa, S. Grudinin
In Proceedings of Information Technologies and Systems 2016

Workshop papers

December 2019
Working memory facilitates reward-modulated Hebbian learning in recurrent neural networks
R. Pogodin, D. Corneil, A. Seeholzer, J. Heng, W. Gerstner
NeurIPS 2019 workshop
Real Neurons & Hidden Units: future directions at the intersection of neuroscience and AI

Talks

March 2020
Theoretical Neuroscience Journal Club at CNBC CMU, Pittsburgh
Title: 3-factor Hebbian learning rules in deep networks: an information bottleneck approach

November 2019
DeepMind/UCL PhD Workshop, London
Title: Associative memory in winner-take-all networks: from binary units to spikes

Posters

March 2020	COSYNE 2020 Title: 3-factor Hebbian learning rules in deep networks: an information bottleneck approach (with Peter Latham)
September 2019	NCCD 2019 Title: Associative memory in winner-take-all networks: from binary units to spikes (with Peter Latham)
March 2019	COSYNE 2019 Title: Memories in coupled winner-take-all networks (with Peter Latham)
June 2017	Ninth Traditional school ”Control, Information, Optimization”
September 2016	Information Technologies and Systems 2016
August 2016	Summer Research Program, EPFL
June 2016	Eighth Traditional school ”Control, Information, Optimization”
November 2015	58th MIPT Scientific Conference
September 2015	Amgen Program Cambridge symposium
August 2015	Amgen Program LMU symposium

Honors and awards

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