David G. Nagy

+36-1-392 2222 ext. 2744 davidnagy elte hu 1121 Hungary, Budapest, 29-33 Konkoly-Thege St

Research experience

Junior Research Scientist, HAS Wigner Research Centre for Physics – 2014-present
WRCP of Hungarian Academy of Sciences, Budapest Hungary
Computational Systems Neuroscience Lab, Supervisor: Gergo Orban

Summer Intern, HAS Wigner Research Centre for Physics – 2014
WRCP of Hungarian Academy of Sciences, Budapest Hungary
Computational Systems Neuroscience Lab, Supervisor: Gergo Orban

Undergraduate Researcher, HAS Institute of Experimental Medicine – 2010-2013
IEM of Hungarian Academy of Sciences, Budapest, Hungary
Laboratory of Cerebral Cortex Research, Supervisor: Szabolcs Káli

Education

PhD in Physics, Eotvos University, Budapest, Hungary – in progress

MSc in Physics, Eotvos University, Budapest, Hungary – 2014

BSc in Physics, Eotvos University, Budapest, Hungary – 2012

Other training

Advanced Course on Data Science and Machine Learning
Interdisciplinary Centre of Advanced Studies, Siena, Italy – 2019

Eastern European Machine Learning Summer School
Bucharest, Romania – 2019

Advanced Topics in Machine Learning Summer School
Technical University of Denmark, Kgs. Lyngby, Denmark – 2016

Machine Learning Summer School
Max Planck Institute for Intelligent Systems, Tubingen, Germany – 2015

Publications

2018 – Semantic compression of episodic memories
D.G. Nagy, B. Torok, G. Orban
Proceedings of the 40th Annual Conference of the Cognitive Science Society

2017 — Measuring and filtering reactive inhibition is essential for assessing serial decision-making and learning
B. Torok, K. Janacsek, D.G. Nagy, G. Orban, D. Nemeth
JEP: General, 10.1037/xge0000288

2016 — Episodic memory as a prerequisite for online updates of model structure
D.G. Nagy, G. Orban
Proceedings of the 38th Annual Conference of the Cognitive Science Society

Conference abstracts & posters

2019 — Rate distortion trade-off in human memory
D.G. Nagy, B. Torok, G. Orban
Abstract & poster, Conference on Cognitive Computational Neuroscience 2019, Berlin, Germany

2019 — Hierarchical semantic compression predicts texture selectivity in early vision
M Banyai, D.G. Nagy, G. Orban
Abstract & poster, Conference on Cognitive Computational Neuroscience 2019, Berlin, Germany

2019 — Lossy compression in human memory
D.G. Nagy, B. Torok, G. Orban
Poster, ACDL 2019, Siena, Italy

2018 — Semantic compression of episodic memories
D.G. Nagy, B. Torok, G. Orban
Abstract & poster, Conference on Cognitive Computational Neuroscience 2018, Philadelphia, USA

2018 — Inference of dynamic probabilistic internal representations from reaction time data
B. Torok, D.G. Nagy, K. Janacsek, D Nemeth, G. Orban
Abstract & poster, Conference on Cognitive Computational Neuroscience 2018, Philadelphia, USA

2018 — Lossy compression in human memory
D.G. Nagy, B. Torok, G. Orban
Poster, X. Dubrovnik Conference on Cognitive Science, Dubrovnik, Croatia

2016 — Episodic memory for continual model learning
D.G. Nagy, G. Orban
Poster, Workshop paper at NIPS 2016, Barcelona, Spain, arXiv:1712.01169

2016 — Computational constraints on the dynamics of memory from open hypothesis spaces
D.G. Nagy, G. Orban
Poster, 6th International Conference on Memory, Budapest, Hungary

2016 — Episodic memory as a prerequisite for online updates of model structure
D.G. Nagy, G. Orban

Poster, Budapest CEU Conference on Cognitive Development, Budapest, Hungary

2016 – A normative account of episodic memory in online learning over open model spaces
D.G. Nagy, G. Orban
Poster, Donders Discussions 2015, Radboud University, Nijmegen, The Netherlands

2015 – Normative account of episodic memory
D.G. Nagy, G. Orban
Poster, MLSS, Tubingen, Germany

2013 – Mechanisms of sharp wave-ripple generation and autonomous replay in a hippocampal network model
Sz. Kali, E. Vertes, D.G. Nagy, T.F. Freund, A.I. Gulyas
CNS 2013 Paris, BMC Neuroscience 2013, 14(Suppl 1):O13

2012 – Population dynamics and sequence replay in a network model of area CA3 of the hippocampus
Sz. Kali, E. Vertes, D.G. Nagy, T.F. Freund, A.I. Gulyas
FENS Forum Abstr. 2012, A-471-0031-01814

Teaching experience

Lectures on Modern Scientific Programming – 2018
Co-organiser and lecturer for 2 day autumn school event on machine learning and deep learning, affiliated with GPU lab at MTA Wigner

BCI Lab for high school students – 2018
EEG controlled sphero project with 3 students

Statistical Learning in the Nervous System course – 2015-2018
Lecturer, Eotvos Lorand University, http://golab.wigner.mta.hu/teaching

Preparation course for high school state exam in mathematics – 2014
Lecturer, Budapest University of Technology and Economics Student Association

Research talks

2019 – DUCOG, Dubrovnik, Croatia

2018 – Seminar of Fiser Lab, Central European University, Budapest, Hungary

2018 – Seminar of Kornai Lab, HAS Institute for Computer Science (SZTAKI), Budapest, Hungary

2018 – Budapest Computational Neuroscience Forum, Central European University, Budapest, Hungary

2017 – Machine Learning Seminar, Eötvös University, Budapest, Hungary

2016 – COGSCI, Philadelphia, PA, USA

2012 – XV. IES Days, Balatonszemes, Hungary, Mechanisms of sharp wave-ripple activity in area CA3 of the hippocampus

Outreach talks

2018 – Simonyi memorial day, Hungarian Academy of Sciences, Budapest, Hungary

2016 – Moholy-Nagy University of Art and Design, Budapest, Hungary

2015 – Eotvos Jozsef High School, Budapest, Hungary

Languages

English – Advanced, C1 level

Hungarian – Native

Programming languages

Python (and Tensorflow), Mathematica – used for both research and coursework

Matlab, R, C++ – used mainly for coursework