

Botond Branyicskai-Nagy

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Education

University College London	September 2023 – September 2024
MSc Machine Learning (<i>Distinction</i>)	
Probabilistic and Unsupervised Learning ¹ Approximate Inference ¹ Bayesian Deep Learning Applied ML Supervised Learning Reinforcement Learning ² Applied Deep Learning	
MSc Thesis (<i>Distinction</i>): <i>Hierarchical Bayesian Program Synthesis for Neural Algorithmic Reasoning</i> : wake-sleep Bayesian algorithm learning with neural library of primitives, and a transformer-based generative model for synthesis. Supervised by Prof. Mirco Musolesi.	
Imperial College London	October 2020 – June 2023
BSc Physics with Theoretical Physics	
BSc Thesis (<i>Distinction</i>): <i>Computational Evolution</i> : Simulation and analysis of evolutionary dynamics. Comparison with theoretical models, exploration of optimisation algorithms. Supervised by David Clements.	

Experience

ML Research Consultant – Stealth Startup (Consulting), London	2025–
Feasibility study on integrating LLMs into company’s core product for survey schema detection. Implementation, documentation of methodology and experiments, feasibility recommendations.	
Research Collaborator — University College London	2024–
Research on Neural Program Synthesis and Algorithmic Reasoning in the Machine Intelligence Lab, supervised by Prof. Mirco Musolesi.	
Research Intern — Imperial College London	2023
Causal discovery using cross-validation as compared with Bayesian Model Selection (using GPLVM), supervised by Mark van der Wilk and funded by Imperial UROP.	

Projects

Masked Image Modelling — University College London	2024
Self-supervised learning framework: a VisionTransformer is pre-trained to reconstruct partially masked images then fine-tuned on the Oxford-IIIT Pets dataset for segmentation. (<i>Distinction</i>)	
Solar Sail (Project Svarog) — Imperial College Space Society	2022
Orbital mechanics: spacecraft trajectory simulation, atmospheric effects, relativistic corrections.	
Machine learning for LHCb experiment — Imperial College London	2022
Leading ML team in project analysing decay product distribution from LHCb experiment for Standard Model comparison. Neural Networks (TensorFlow), Decision Trees. (<i>Distinction</i>)	
Laser microphone — Imperial College London	2020
Building a proof-of-concept prototype of a laser interferometer-based device capable of recovering audio from vibrations of a window from a distance. (<i>Distinction</i>)	

Awards

2nd Year Quantum Physics Article Prize – Published on Imperial Website (2022)
Young Researchers of Natural Sciences, Conference Presentation Distinction (2016)

Skills and Interests

Languages & Programming
Python (PyTorch, TensorFlow, GPflow, JAX, OpenAI API), Julia, Cluster usage
Languages
Hungarian (Native), English (Proficient - Cambridge Advanced 206), French (Intermediate)

¹Module part of PhD programme at the Gatsby Computational Neuroscience Unit
²Module taught by Google DeepMind

For references please contact:

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