

CONTACT INFORMATION

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EDUCATION

University of Sussex 2023 - 2027

- PhD in Informatics
Thesis: Considering spatial embeddings and synaptic delays for neural networks in neuromorphic computing

ELTE Eötvös Loránd University 2020-2023

- M.Sc. in Artificial Intelligence
Thesis: Extending Sparse Dictionary Learning Methods for Adversarial Robustness
Final Grade: *Excellent*

Humboldt University Berlin 2022

- Exchange semester with ERASMUS

ELTE Eötvös Loránd University 2016-2020

- B.Sc. in Computer Science, specialization in modelling
Thesis: Generating Symbolic Music using Artificial Neural Networks
Final Grade: *Good*

Johannes Kepler University Linz 2019

- Exchange semester with CEEPUS

EXPERIENCE

Research

- **Sussex AI**
 - Delay learning and structural plasticity 2023-
- **The Alan Turing Institute**
 - NeuroAI and backdoor reinforcement learning 2024-2025
- **Neural Information Processing Group**
 - Sparse approximation for adversarial robustness 2021-2022
 - Multimodal emotion estimation using transformer architectures 2021

Teaching

- **Neuromatch Academy**
 - NeuroAI 2025
- **University of Sussex**
 - Bio-inspired AI 2024
- **ELTE Eötvös Loránd University**
 - Algorithms and Data Structures 2020
 - Object-oriented programming in C++ 2018

Software development

- **evosoft**
 - C++ Software Engineer 2019-2020

SKILLS

- *Programming Languages*: C/C++, Python, Prolog
- *Softwares/Libraries*: NumPy, Keras, PyTorch, OpenCV, Microsoft Office, Latex
- *Language Skills*: English: C1 (Advanced), German: A2 (Elementary)

AWARDS	• The Alan Turing Institute - PhD enrichment scheme	2024
	• be.AI Leverhulme Doctoral Scholarship	2023
	• Nokia Young Scientist Award	2023
	• TDK - 1st prize	2022
CERTIFICATES	• Associate Fellow in Advanced HE	2024
	• Neuromatch Computational Neuroscience Summer School	2023
	• Duolingo English Proficiency Test	2023
PUBLICATIONS	• Journal	
	◦ Mészáros, B., Knight, J., & Nowotny, T. <i>Nature Communications</i> . Efficient Event-based Delay Learning in Spiking Neural Networks	
	◦ Ghosh, M., Habashy, K. G., De Santis, F., Fiers, T., Ercelik, D. F., Mészáros, B., ... & Goodman, D. F. <i>eNeuro</i> . Spiking neural network models of interaural time difference extraction via a massively collaborative process	
	◦ Mészáros, B., Knight, J., & Nowotny, T. <i>Frontiers in Computational Neuroscience</i> . Learning Delays Through Gradients and Structure: Emergence of Spatiotemporal Patterns in Spiking Neural Networks.	
	• Conference	
	◦ Mészáros, B., Knight, J. C., Timcheck, J., & Nowotny, T. <i>International Conference on Neuromorphic Systems (ICONS)</i> . A Complete Pipeline for deploying SNNs with Synaptic Delays on Loihi 2	
	◦ Shoesmith, T., Knight, J. C., Mészáros, B., Timcheck, J., & Nowotny, T. <i>Neuro Inspired Computational Elements (NICE)</i> . Eventprop training for efficient neuromorphic applications	
	◦ Szeghy, D., Aslan, M., Fóthi, Á., Mészáros, B., Milacski, Z. Á., & Lőrincz, A. <i>International Conference on Deep Learning Theory and Applications (DeLTA)</i> . Structural Extensions of Basis Pursuit: Guarantees on Adversarial Robustness.	
	• Preprint	
	◦ Mészáros, B., Knight, J. C., Akarca, D., & Nowotny, T. Space as Time Through Neuron Position Learning	
ACADEMIC OUTREACH	• Talks	
	◦ Spiking Neural Networks as Universal Function Approximators	2025
	◦ International Workshop on Reliable and Sustainable Neuromorphic Hardware	2025
	◦ Neuro Inspired Computational Elements Conference	2025
	◦ Sensory Neuroscience and Computation centre seminar	2025
	◦ Robots in Disguise: Fundamental AI Reading Group	2024
	◦ MPIE Conference	2024
	◦ OTDK - National Scientific Student Body Conference	2023
	• Posters	
	◦ Spiking Neural Networks as Universal Function Approximators	2024
	◦ 33rd annual Computational Neuroscience Meeting	2024
	◦ The Fifth International Convention on the Mathematics Of Neuroscience and AI	2024
	◦ International Conference on Neuromorphic Computing and Engineering	2024
FREETIME	• Volunteer work	
	◦ A Város Mindenkié	
	◦ Heti Betevő	
	◦ Organizing AI themed artisan workshops for layman	
	• Sport activity	
	◦ Sabre fencing - 4 times national champion, European Championship 4th place	2005-2016
	• Music production, Songwriting, DJing	