Justus F. Hübotter

PhD Candidate in Artificial Intelligence

Date & place of birth	November 8th 1992 – Bremen, Germany
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Education

June 2021 - present	PhD Artificial Intelligence Radboud University – Donders Institute, Nijmegen, The Netherlands Working on spiking neural networks for robot control with Prof. Marcel van Gerven. Estimated graduation in summer 2025.
Sep 2019 - July 2021	MSc Artificial Intelligence Vrije Universiteit, Amsterdam, The Netherlands Graduated cum laude
Sep 2017 - July 2019	MSc Neuroscience (Research) Vrije Universiteit, Amsterdam, The Netherlands
Sep 2013 - Aug 2017	BSc Biomimicry (Bionik) International Studies University of Applied Sciences, Bremen, Germany
Aug 2003 - July 2012	High school A-levels degree Ökumenisches Gymnasium, Bremen, Germany

Work Experience

Sep 2021 - present Apr 2020 - June 2021	Teachers assistant Radboud University – AI, Nijmegen, The Netherlands VU – Computer Science, Amsterdam, The Netherlands Shaping the courses Complex Adaptive Systems with Prof. Marcel van Gerven (RU), Computational Intelligence with Prof. Jakub Tomczak (VU), and Evolutionary Computing with Prof. Guszti Eiben (VU).
Nov 2019 - Feb 2020	Student assistant VU – Social & Communication Science, Amsterdam, The Netherlands Writing a Marie Sklodowska-Curie grant proposal with Prof. Elly Konijn.
Feb 2018 - Aug 2018	Research internship & master thesis Amsterdam UMC – Neurosciences, Amsterdam, The Netherlands Towards predicting cognitive profiles in MS from network dynamics in fMRI data with Prof. Menno Schoonheim.
Feb 2017 - Aug 2017	Student assistant & bachelor thesis German Research Center for Artificial Intelligence (DFKI), Bremen, Germany Deep EEG: A CNN-based signal processing chain for brain data with Dr. Mario Krell.
Sep 2015 - Jan 2016	Research internship & conference paper Singapore Institute for Neurotechnology (SINAPSE), National University of Singapore, Singapore Working in the neuromorphic engineering group with Dr. Sunil Kukreja.

Relevant Skills & Interests

I am proficient at programming in **Python** and have successfully applied my knowledge in various **machine learning** projects (primarily **PyTorch**). I also have experience working with Java, C, R, Latex, and other several other commonly used languages and software.

I am interested in researching principles of efficient computation in natural and artificial intelligent systems. My current focus lies on **spiking neural networks for robotic control**. In this context, I aim to contribute to the symbiotic relationship between neuroscience and artificial intelligence research. I strongly share the core scientific virtues of integrity, transparency, and open-mindedness.

Languages: English (fluent C1), German (native), Dutch, French, and Spanish (basic)

Publications

J. F. Hübotter, M. van Gerven, S. Thill, and N. Ahmad: Revisiting Noise Perturbation and Decorrelation Learning in Spiking Neural Networks. *In preparation*

J. F. Hübotter, P. Lanillos, S. Thill, and M. van Gerven: Training Spiking Neural Networks for Continuous Control with Surrogate Gradients. *In preparation*

J. F. Hübotter, S. Thill, M. van Gerven, and P. Lanillos (2023): Learning Policies for Continuous Control via Transition Models. *Communications in Computer and Information Science book series (CCIS, volume 1721)*

J. F. Hübotter, P. Lanillos, and J. M. Tomczak (2021): Training Deep Spiking Auto-encoders without Bursting or Dying Neurons through Regularization. *Preprint*

J. F. Hübotter, T. Maaiveld, and S. Wijtsma (2020): Evolutionary Generation of Music with Geometry. *Preprint*

F. Sorgini, R. Ghosh, **J. F. Hübotter**, R. Caliò, C. Galassi, C. M. Oddo, and S. L. Kukreja (2016): Design and preliminary evaluation of haptic devices for upper limb stimulation and integration within a virtual reality cave. *6th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)*