Curriculum Vitæ

Personal Information

Name Lorenz Vaitl

Education

10/2012 – 08/2015 **B.Sc. Informatik**, *RWTH Aachen University*, Aachen, 2.0.
Minor in Mechanical Engineering. Courses in Machine Translation and Artificial Intelligence. Bachelor's thesis on development of an Embedded System with medical application.

09/2015 – 07/2016 **M.Sc. Computer Science**, *Universitat Politécnica de Valéncia*, Valencia, 1.5.
Stay abroad with ERASMUS+. Focus on Artificial Intelligence and Pattern Recognition.

10/2016 – 01/2019 **M.Sc. Computer Science**, *Technische Universität Berlin*, Berlin, 1.2.
Specialization in Cognitive Systems. Master's thesis on Sparse Gaussian Processes in the field of Probabilistic Modeling under Prof. Manfred Opper.

05/2019 – present **PhD Candidate, Teaching Assistant**, *Technische Universität Berlin*, Berlin.
PhD Studies at the chair for Machine Learning under Prof. Klaus-Robert Müller. Focus on Probabilistic Machine Learning, especially Normalizing Flows applied to Lattice Field Theory problems. Teaching introductory lectures on Machine Learning and seminars.

Work experience

05/2017 – 12/2018 **Student Assistant**, *Technische Universität Berlin*, Robotics and Biology Laboratory.
Leveraging prior knowledge for facilitating Reinforcement Learning, Machine Learning for teleoperating a robotic hand.

02/2022 – 03/2022 **Research Internship**, *Cyprus Institute*, Computation-based Science and Technology Research Center.
Working on $SU(N)$-equivariant Continuous Normalizing Flows for Lattice Gauge Theory.

Publications

- L. Vaitl, K. A. Nicoli, S. Nakajima, and P. Kessel. Path-Gradient Estimators for Continuous Normalizing Flows. In *Proceedings of the 39th International Conference on Machine Learning*. PMLR, 17–23 Jul 2022. Oral presentation
- L. Vaitl, K. A. Nicoli, S. Nakajima, and P. Kessel. Gradients should stay on Path: Better Estimators of the Reverse- and Forward KL divergence for Normalizing Flows. *Machine Learning: Science and Technology*, 2022

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Languages

German	Mother tongue
English	Proficient (C1)
Spanish	Proficient (C1)

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