

Michael Deistler

Curriculum Vitae

Education

- since 2017 **Elite Master of Science in Neuroengineering**, *Technical University of Munich*, German Grade – 1.1, American GPA – 3.9.
- since 2017 **Research Excellence Certificate**, *Technical University of Munich*, Awarded for 30 additional ECTS during the M. Sc. in Neuroengineering.
- 2017 **Erasmus Semester**, *KTH Royal Institute of Technology*, Stockholm, German Grade – 1.3, American GPA – 3.7.
- 2013–2017 **Bachelor of Science in Electrical Engineering and Information Technology**, *Technical University of Munich*, German Grade – 1.2, American GPA – 3.8, Passed with High Distinction.
- 2013 **Abitur / Highschool Degree**, *Gymnasium Landau a. d. Isar*, German Grade – 1.1, American GPA – 3.9.

Experience

- 2019 **Master thesis**, *Technical University of Munich. Chair for computational Neuro-engineering*, Munich, Supervisors: Prof Dr Jakob Macke, Dr Pedro Goncalves.
 - Bayesian inference on the pyloric rhythm
- 2018 **Nine Week Research Project**, *Max-Planck-Institute for Brain Research, Group for Computation in Neural Circuits*, Frankfurt, Supervisors: Prof Dr Julijana Gjorgjieva, Dr Marina Wosniack.
 - A spiking neural network for modeling stable activity propagation in *Drosophila* larvae
- 2018 **Six Week Research Project**, *University of Edinburgh, Faculty of Computational Neuroscience*, Edinburgh, Supervisors: Dr Matthias H. Hennig, Martino Sorbaro.
 - Alleviating catastrophic forgetting in neural networks, see section *Publication*
- 2014–2018 **Teaching Assistant**, *Classes in 'Stochastic signals', 'Signal representation' and 'Digital Design'*, Munich.
- 2017–2018 **Working Student**, *Brainlab AG, Research and Development*, Munich.
 - Electrical circuit design for medical applications
- 2016 **Six month Internship**, *BMW, Research Center for Autonomous Driving*, Munich.
 - Development and implementation of an algorithm for movement compensation and environment capturing in OpenCL
- 2015 **Eleven Week Internship**, *German Aerospace Center, Research Center for Communication and Navigation*, Munich.
 - Work on data visualization and signal transmission

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2013-2014 **Participation in the AdvElsor Program**, *Technical University of Munich*.

- Soft-skill program offered by the TU Munich. Additionally, students gained hands-on experience by building a rotor display in a group of ten people.

Publication

Title *Local learning rules to attenuate forgetting in neural networks*
Co-authors PhD Matthias Hennig, M.Sc. Martino Sorbaro, PhD Michael Rule
Journal Still in review process
Link <https://arxiv.org/abs/1807.05097>
Description This Paper explores the problem of overcoming forgetting in artificial neural networks. While there are attempts to alleviate this problem, none of them provides an explanation for how such algorithms could be implemented in the brain. Here, we use Hopfield networks to derive local and hence biologically plausible learning rules.

Bachelor Thesis

Title *Temporal Interpolation of Grayscale Frames using Event Data from the DAVIS240*
Supervisors Professor Eckehard Steinbach & PhD Christoph Bachhuber
Description Dynamic vision sensors are a neuromorphic camera technology recording event data on an almost continuous time-scale. In addition to this data, the DAVIS240 also records traditional frame-based videos. This thesis explored the fusion of this data in order to create super slow-motion videos.

Awards

2013 'Lichtinger Preis' for an outstanding highschool degree in Natural Sciences
2017 Fastlane scholarship of BMW (declined)
since 2017 Member of the Elite-Network of Bavaria

Programming Languages

PYTHON **Advanced**, *Deep learning projects using PyTorch and Tensorflow; research project in Edinburgh, diverse university projects.*
MATLAB **Advanced**, *Multiple classes and projects, including Bachelor thesis.*
C++ **Intermediate**, *Self studies; six months working experience at BMW.*
C **Intermediate**, *University course.*
JAVA **Basic**, *Two-year education in highschool.*

Languages

German **Mothertongue**
English **C2 (proficient)**
French **A2 (elementary)**
Swedish **A2 (elementary)**