Jonas M. Mikhaeil

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Date of Birth	27th September 1997	**Email**	j.mikhaeil@gmail.com
Nationality	German	**Website**	https://jonasmikhaeil.github.io

Education

since Apr 2020 M.Sc. in Physics
Heidelberg University, Germany

Current average: 1.0*
Scholarship: German Academic Scholarship Foundation

since Apr 2020 M.A. in Philosophy
Heidelberg University, Germany

with a particular focus on philosophy of science and cognition, and political philosophy
Current average: 1.2

Oct 2016- Feb 2020 B.Sc. in Physics
Heidelberg University, Germany

Bachelor thesis: 1.0
Final average: 1.2

2008-2016 Secondary Education - Abitur at Gymnasium an der Gartenstraße, Germany

Final average 1.0

*all grades are on a scale from 1 to 5 (with 1.0 being the best possible grade)

Publications & Conferences

Publications

1. Monfared, Z.*, **Mikhaeil, J.*** & Durstewitz, D. (Oct 2021). *How to train RNNs on chaotic data.* arXiv: 2110.07238 [cs.LG]. URL https://arxiv.org/abs/2110.07238. In Submission.

2. Brenner, M.*, Bereska, L.*, **Mikhaeil, J.**, Hess, F., Monfared, Z., Kuo, P. & Durstewitz, D. (Oct 2021). *Tractable Dendritic RNNs for Identifying Unknown Nonlinear Dynamical Systems.* In Submission.

   *These authors contributed equally

Poster Presentations

1. *How to train RNNs on chaotic neural data.* Poster presented at the Bernstein Conference, 2021.

Scholarship

German Academic Scholarship Foundation (Studienstiftung des Deutschen Volkes)

since Oct 2016 Scholarship holder (awarded to fewer than **0.5%** of German students)

summer academies: *Humanitarian Epidemiology*, Ftan 2019; *How to study animal minds*, Leysin 2017

seminars: *How is social change possible - the possibility of a post growth society*, Wuppertal 2018 (co-organizer, 65 participants); *Foundations in Mathematics - Modern Views*, Munich 2017

Research Experience

Time series and statistical machine learning

Since
Mar 2021
Master's thesis
in the Dept. of Theoretical Neuroscience (DurstewitzLab), CIMH, Mannheim, Germany

Research on the connection between an RNNs long-term behavior and its loss gradients in training, and consequent development of an RNN training algorithm designed for chaotic data

Oct 2019-
Mar 2021
Central Institute for Mental Health (CIMH), Mannheim, Germany
Research assistant in the Dept. of Theoretical Neuroscience (DurstewitzLab)

Research on invariant properties of dynamical systems with the goal of developing new evaluation measures for dynamical system reconstruction and to improve the training of sequential variational autoencoders

Particle physics

Apr 2019-
Jul 2019
Bachelor's thesis
at Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany

Topological shower reconstruction in a highly granular calorimeter with optical readout

Oct 2018
Testbeam at CERN, Geneva, Switzerland
Research assistant

Monitoring of CALICE analog hadron calorimeter for data taking at CERN's testbeam

Jul 2018 -
Sep 2018
Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany
Intern in DESY's Summer Student Program

Time resolution studies of CALICE's analog hadron calorimeter at DESY's future lepton collider group

Oct 2017 -
Mar 2018
Kirchhoff-Institute for Physics, ATLAS Proton-Proton Collisions, Heidelberg, Germany
Research assistant

Embedded software development for Zynq UltraScale+ MPSoC intended for the ATLAS level-1 calorimeter trigger upgrade

Teaching Experience

Since
Oct 2021
Teaching Assistant for *Dynamical Systems Theory in Machine Learning & Data Science*
Graduate Level Course held by Prof. Daniel Durstewitz

Design and evaluation of worksheets, as well as giving tutorials consolidating the contents of the lecture

Extracurricular Activities

Oct 2020
Workshop on topological methods in data analysis, Heidelberg University
Participant

Oct 2019
EMBL Science and Society Conference "Science as Storytelling: From Facts to Fictions
Participant

Jul 2017
Apr 2019
Local *Effective Altruism* group Heidelberg
Organised talks, prepared readings and managed discussions