

# Jonas Mikhaeil

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<b>Date of Birth</b>	27 <sup>th</sup> September 1997	<b>Email</b>	j.mikhaeil@gmail.com
<b>Nationality</b>	German		

## Education

<b>since</b> <b>Nov 2020</b>	MSc in Physics <i>Heidelberg University</i>  Current average: 1.0 <i>Scholarship: German Academic Scholarship Foundation</i>
<b>since</b> <b>Nov 2020</b>	MA in Philosophy <i>Heidelberg University</i>  with a particular focus on philosophy of science and cognition, and political philosophy
<b>Oct 2016- Jul 2020</b>	BSc in Physics <i>Heidelberg University</i>  Bachelor thesis: 1.0 Final average: 1.2
<b>2008-2016</b>	Secondary Education - Abitur at Gymnasium an der Gartenstraße  Final average: 1.0
<b>2013-2016</b>	Studying before Abitur -University of Düsseldorf

## Publications & Conferences

### Publications

1. Monfared, Z. \*, **Mikhaeil, J. \*** & Durstewitz, D. (2021). *How to train RNNs on chaotic data*. submitted to ICLR
2. Brenner, M. \*, Bereska, L. \*, **Mikhaeil, J.**, Hess, F., Monfared, Z., Kuo, P. & Durstewitz, D. (2021). *Tractable Dendritic RNNs for Identifying Unknown Nonlinear Dynamical Systems*. submitted to ICLR

\*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)

<b>since</b> <b>Oct 2016</b>	Scholarship holder  summer academies: <i>Humanitarian Epidemiology</i> , Ftan 2019; <i>How to study animal minds</i> , Leysin 2017  seminars: <i>How is social change possible - the possibility of a post growth society</i> , Wuppertal 2018 (co-organizer, 65 participants); <i>Foundations in Mathematics - Modern Views</i> , Munich 2017
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## Research Experience

### Time series, dynamical systems and machine learning

- Since Mar 2021** Master's thesis  
*at DurstewitzLab*  
Research on the connection between an RNNs long-term behaviour 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  
*Research assistant in the group "Theoretical Neuroscience" (DurstewitzLab)*  
Research on invariant phase-space quantities of dynamical systems with the goal of developing a new loss function for RNN training

### Particle physics

- Apr 2019- Jul 2019** Bachelor's thesis  
*at Deutsches Elektronen-Synchrotron DESY*  
Topological Shower Reconstruction in a Highly Granular Calorimeter with Optical Readout
- Oct 2018** Testbeam at CERN  
*Research assistant*  
Monitoring of CALICE Analog Hadron Calorimeter for data taking at CERN's Testbeam
- Jul 2018 - Sep 2018** Deutsches Elektronen-Synchrotron DESY  
*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  
*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*  
*Lecturer: Prof. Daniel Durstewitz*  
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## Extracurricular Activities

- Oct 2020** Course on Topological Methods in Data Analysis  
*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  
*Organisation including talks, preparing readings and managing discussions*