

# Curriculum Vitae

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## Education

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- 2018 - **PhD in Computational Neuroscience and Machine Learning**  
**mackelab**, Technical University of Munich and University of Tübingen
- 2015 - 2018 **MSc in Computational Neuroscience** (with distinction)  
Bernstein Center for Computational Neuroscience, Berlin, Germany  
Thesis: *Model Comparison in Approximate Bayesian Computation*
- 2011 - 2015 **BSc in Cognitive Science** (with distinction)  
University of Osnabrück, Osnabrück, Germany  
Thesis: *Online Decoding of Contour Perception through EEG*

## Professional Experience

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- 2021 - present **Lecturer at KI macht Schule**  
• German initiative to teach AI in high school
- 2016 - 2018 **Research assistant with Prof. Susanne Schreiber**  
**Computational Neurophysiology**, Humboldt University Berlin  
• studying energy efficiency of synaptic stimuli in single cell models
- 2017 - 2018 **Master thesis with Prof. Jakob Macke**  
**Neural Systems Analysis**, Caesar Research Center, Bonn
- 2016 - 2018 **Research intern with Prof. Henning Sprekeler,**  
**Modeling of Cognitive Processes**, Technical University Berlin  
• analysis of a model for the formation of grid cells, master thesis
- Mar 2017 - Jul 2017 **Research intern with Prof. Andrea Kühn,**  
**Movement Disorder Group**, Charité University Medicine Berlin  
• analysis of local field potential data for deep brain stimulation
- Aug 2014 - Oct 2014 **Research intern, Department of Biomedical Engineering**  
Universidad Antonio Nariño, Bogotá, Colombia  
• EEG data analysis and decoding for brain-computer interfaces
- Aug 2013 - Dec 2013 **Research intern, Department of Psychiatry**  
University of British Columbia, Vancouver, Canada  
• fMRI data analysis

## Teaching Experience

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- 2018 - **Lecturer, MSNE Master program, TU Munich**  
Master's course: Introduction to programming and ML in Python  
Master's course: Large Scale Modeling and Data Analysis
- 2012 - 2015 **Teaching Assistant, University of Osnabrück**  
Tutor in lectures on logic, mathematics and neuroinformatics

## Awards and Memberships

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2016 Smartstart scholarship by Bernstein Network and Volkswagen Stiftung  
2013 and 2014 DAAD RISE scholarship 2013 (Vancouver) and 2014 (Bogotá)

## Skills

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Languages	<b>German</b> native	<b>English</b> C1	<b>Spanish</b> B1	<b>French</b> B1
Programming	<b>Python, Java, Shell, Git, GitHub, CI</b> — advanced			

## Community engagement

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Reviewing Journal of Open Source Software; ICLR 2021  
Teaching Workshop: **“Simulation-based inference for scientific discovery”**

## Publications

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### *Journal papers:*

\*Tejero-Cantero, A., **\*Boelts, J.**, \*Deistler, M., \*Lueckmann, J. M., Durkan, C.,  
Gonçalves, P. J., Greenberg D. S. & Macke, J. H. (2020).  
sbi: a toolkit for simulation-based inference.  
Journal of Open Source Software, 5(52), 2505.

### *Conference papers:*

Ramesh, P., Lueckmann, J. M., **Boelts, J.**, Tejero-Cantero, Á., Greenberg, D. S.,  
Goncalves, P. J., & Macke, J. H. (2021).  
GATSBI: Generative Adversarial Training for Simulation-Based Inference.  
ICLR 2021.

Lueckmann, J. M., **Boelts, J.**, Greenberg, D. S., Gonçalves, P. J., & Macke, J. H.  
(2021).  
Benchmarking Simulation-Based Inference.  
AISTATS 2021.

**Boelts, J.**, Lueckmann, J. M., Gonçalves, P., Sprekeler, H., & Macke, J. H. (2018).  
Comparing neural simulations by neural density estimation.  
In 2019 Conference on Cognitive Computational Neuroscience, Berlin 2019.

**Boelts, J.**, Cerquera, A., & Ruiz-Olaya, A. F. (2015).  
Decoding of imaginary motor movements of fists applying spatial filtering in a BCI  
simulated application.  
In IWINAC 2015

### *Preprints:*

**Boelts, J.**, Lueckmann, J. M., Gao, R., & Macke, J. H. (2021).  
Flexible and efficient simulation-based inference for models of decision-making.  
bioRxiv.