

# Robin Gutzen

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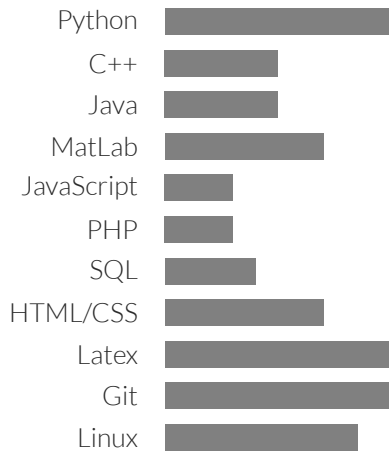
@rgutzen  
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robin-gutzen

## RESEARCH INTERESTS

Neural Network Dynamics  
Simulation & Validation  
Statistical Testing  
Data Visualization  
Neuromorphic Computing  
Predictive Coding

## SKILLS

### PROGRAMMING/PLATFORMS



### LANGUAGE



## NON-RESEARCH INTERESTS

Climbing  
Cooking  
Woodworking

## EDUCATION

### RESEARCH CENTER JÜLICH

PHD. AT INSTITUTE FOR COMPUTATIONAL AND SYSTEMS NEUROSCIENCE  
Jul 2018 - today

### RWTH AACHEN UNIVERSITY

#### MASTER PHYSICS

Oct 2015 - Mar 2018

Major in Nanoelectronics, Minor in Biophysics

Thesis on validation of neural network simulations (@ Research Center Jülich)

Final grade 1.2

### UNIVERSITÉ MONTPELLIER II

#### ERASMUS EXCHANGE

Sep 2013 - Jun 2014 | Montpellier, France

### RWTH AACHEN UNIVERSITY

#### BACHELOR PHYSICS

Oct 2011 - Sep 2015

Thesis on detection and analysis of dissolved fluorescent molecules

### MATARÉ GYMNASIUM.EUROPASCHULE

#### HIGHSCHOOL

Sep 2002 - Jul 2011

## WORK EXPERIENCE

### RWTH INSTITUTE 1A | RESEARCH ASSISTANT

Mar 2014 - Aug 2014

Literature research about novel materials for neuromorphic computing

## EXTRACURRICULAR ACTIVITY

### TEDxRWTHAACHEN CONFERENCE

ORGANISATOR AND CHAIR OF TEDxRWTHAACHEN E.V.

2016, 2017

### BEBUDDY-PROGRAMM

SUPPORTING FOREIGN STUDENTS

2015-16

## WORK-RELATED ACTIVITY

### SERVING ON THE SCIENTIFIC AND TECHNICAL COUNCIL

Jan 2020 - Jan 2022

### CONTENT CURATION

Jan 2019 - Jan 2020

Managing IT infrastructure; Support in implementing reproducible research

### SERVING ON ADMISSION COMMITTEES

2018, 2019

### SUPERVISING AN INTERNSHIP

Jun 2017 - Jul 2017

# ACADEMIC WORK

## PUBLICATIONS

- 2018 **R. Gutzen**, M. von Papen, G. Trenschi, P. Quaglio, S. Grün, M. Denker "Reproducible neural network simulations: statistical methods for model validation on the level of network activity data" *Frontiers in Neuroinformatics* 12:90, doi:10.3389/fninf.2018.00090
- 2018 G. Trenschi, **R. Gutzen**, I. Blundell, M. Denker, A. Morrison "Rigorous neural network simulations: a model substantiation methodology for increasing the correctness of simulation results in the absence of experimental validation data" *Frontiers in Neuroinformatics* 12:81, doi:10.3389/fninf.2018.00081

## POSTER PRESENTATIONS

- 2020 **Human Brain Project Summit, Athens**  
D. Ulianych, **R. Gutzen**, J. Sprenger, E. Pastorelli, G. De Bonis, P. Stanislaw Paolucci, Andrew Davison, Sonja Grün, Michael Denker "Designing reproducible analysis workflows for experimental and simulated activity using Elephant"
- 2019 **INM ICS Retreat, Jülich**  
**R. Gutzen**, S. Grün, M. Denker "A statistical test of eigenvector angles to evaluate the similarity of neural network simulations"
- 2019 **Meeting of the German Neuroscience Society, Göttingen**  
**R. Gutzen**, M. von Papen, G. Trenschi, P. Quaglio, S. Grün, M. Denker "Reproducible neural network simulations: model validation on the level of network activity data"
- 2018 **Bernstein Conference, Berlin**  
**R. Gutzen**, M. von Papen, G. Trenschi, P. Quaglio, S. Grün, M. Denker "Reproducible neural network simulations: model validation on the level of network activity data"
- 2018 **Human Brain Project Summit, Maastricht**  
A. Yegenoglu, **R. Gutzen**, M. Denker, S. Grün "Utilizing the Elephant and NetworkUnit frameworks within the Collaboratory for an HPC enabled workflow"
- 2017 **Data Science Summer School, Paris**  
**R. Gutzen**, S. Grün, M. Denker "Validation Methods for Neural Network Simulations"
- 2017 **INM ICS Retreat, Jülich**  
**R. Gutzen**, S. Grün, M. Denker "Validation Methods for Neural Network Simulations"

## TALKS

- 2020 **Human Brain Project Summit, Athens**  
"Developing pipelines for multi-scale/species/method analysis"
- 2019 **Human Brain Project SP3 meeting, Liège**  
"Building a workflow for the analysis of slow wave activity across heterogeneous measurement"
- 2019 **INCF Neuroinformatics Conference, Warsaw**  
"Evaluating neural network models within a formal validation framework"
- 2019 **Brain Twitter Conference**  
"How much do you trust a model? - Rigor in neuroscientific modeling and simulation through validation"
- 2019 **Human Brain Project SP4 meeting, Paris**  
"Comparing activity dynamics of models and living brains"

## LAB VISITS

- 2019 **APE lab, Istituto Nazionale di Fisica Nucleare, Rome**  
3 weeks, working on a collaborative project to integrate heterogeneous measurements within a reproducible workflow

## WORKSHOPS & SCHOOLS

- 2019 2nd Data Analysis Methods (DAME) Workshop, *Hamburg*
- 2018 Data Analysis Methods (DAME) Workshop, *Karlsruhe*
- 2017 Data Science Summer School, *Paris*
- 2017 HBP BSP Hackathon, *Geneva*
- 2017 G-Node Advance Neural Data Analysis Course, *Barmen*

## TUTORING

- 2019 3rd G-Node Advance Neural Data Analysis Course, *Barmen*
- 2018-19 RWTH lecture 'Introduction to Computational Neuroscience', *Aachen*

## AWARDS & GRANTS

- 2019 1500€ poster price by INCF (sponsored by De Gruyter)

## COMMUNITY SERVICE

- Contributing to open source software: NetworkUnit, Elephant, SciUnit, Neo
- Peer review for *Frontiers of Neuroinformatics* (2018, 2019), and *ReScience* (2019)