

Robin Gutzen

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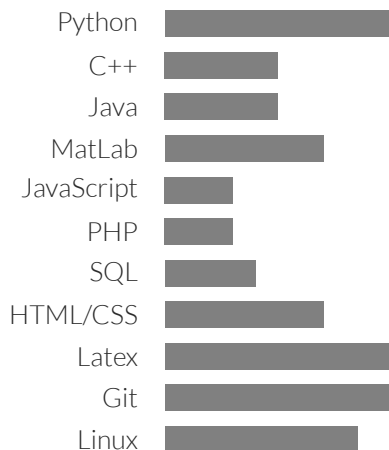
@rgutzen
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robin-gutzen

RESEARCH INTERESTS

Neural Network Dynamics
Simulation & Validation
Statistical Testing
Signal Processing
Data Visualization
Data Management

SKILLS

PROGRAMMING/PLATFORMS



LANGUAGE



NON-RESEARCH INTERESTS

Climbing
Cooking & Fermentation
Woodworking & Pottery

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

WORK-RELATED ACTIVITY

SERVING ON THE SCIENTIFIC AND TECHNICAL COUNCIL

2020 - 2022

CONTENT CURATION

2019 - 2021

Managing IT infrastructure; Support in implementing reproducible research

SERVING ON ADMISSION COMMITTEES

2018, 2019

SUPERVISING STUDENTS

2017, 2022

EXTRACURRICULAR ACTIVITY

TEDxRWTHAACHEN CONFERENCE

ORGANISATOR AND CHAIR OF TEDxRWTHAACHEN E.V.

2016, 2017

BEBUDDY-PROGRAMM

SUPPORTING NEWLY ARRIVED FOREIGN STUDENTS

2015-16

ACADEMIC WORK

PUBLICATIONS

- 2018 **R. Gutzen**, M. von Papen, G. Trench, 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. Trench, **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

TALKS (SELECTION)

- 2022 **BASSES workshop, Rome**
"Blocks instead of puzzles pieces - analyzing cortical wave activity across scales in an adaptable framework"
- 2022 **BrainMatter webinar, online**
"An adaptable analysis pipeline makes cortical wave phenomena comparable across heterogeneous datasets"
- 2021 **Neural Coding, online**
"Eigenangles: evaluating the statistical similarity of neural network simulations via eigenvector angles"
- 2020 **Human Brain Project Summit, Athens**
"Developing pipelines for multi- scale/species/method analysis"
- 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"

POSTER PRESENTATIONS (SELECTION)

- 2022 **OHBM Conference, Glasgow**
R. Gutzen, G. De Bonis, E. Pastorelli, C. Capone, C. De Luca, G. Mattheisen, A.L. Allegra Mascaro, F. Resta, F.S. Pavone, M.V. Sanchez-Vives, M. Mattia, S. Grün, A. Davison, P.S. Paolucci, M. Denker "Cobrawap: a modular cortical wave analysis pipeline for heterogeneous data"
- 2021 **Sfn Conference, online**
R. Gutzen, G. De Bonis, E. Pastorelli, C. Capone, C. De Luca, G. Mattheisen, A.L. Allegra Mascaro, F. Resta, F.S. Pavone, M.V. Sanchez-Vives, M. Mattia, S. Grün, A. Davison, P.S. Paolucci, M. Denker "An adaptable analysis pipeline makes cortical wave phenomena comparable across heterogeneous datasets"
- 2020 **Bernstein Conference, online**
R. Gutzen, G. De Bonis, E. Pastorelli, C. Capone, C. De Luca, G. Mattheisen, A.L. Allegra Mascaro, F. Resta, F.S. Pavone, M.V. Sanchez-Vives, M. Mattia, S. Grün, A. Davison, P.S. Paolucci, M. Denker "Building adaptable and reusable pipelines for investigating the features of slow cortical rhythms across scales, methods, and species"
- 2019 **Meeting of the German Neuroscience Society, Göttingen**
R. Gutzen, M. von Papen, G. Trench, P. Quaglio, S. Grün, M. Denker "Reproducible neural network simulations: model validation on the level of network activity data"

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 (SELECTION)

- 2022 **Brain Activity across Scales and Species: Analysis of Experiments and Simulations (BASSES), Rome**
- 2020 **Young Entrepreneurs in Science: From PhD to Innovator, online**
- 2019 **2nd Data Analysis Methods (DAME) Workshop, Hamburg**
- 2017 **Data Science Summer School, Paris**
- 2017 **G-Node Advance Neural Data Analysis Course, Barmen**

SERVICE

- Contributing to open source software: NetworkUnit, Cobrawap, Elephant, SciUnit, Neo
- Peer review for Frontiers of Neuroinformatics (2018, 2019), and ReScience (2019, 2021)

2021 Tutoring the EBRAINS Infrastructure Training on Model Validation, *online*

2021 Tutoring the 4th G-Node Advance Neural Data Analysis Course, *online*

2021 Presenting a workshop at the Human Brain Project Student Conference, *online*

2020 Tutoring the 2nd Elephant User Workshop, *online*

2019 Tutoring the 3rd G-Node Advance Neural Data Analysis Course, *Barmen*

2018-22 Tutoring the RWTH lecture 'Introduction to Computational Neuroscience', *Aachen*

AWARDS & GRANTS

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

2020 2nd place in the John Hunter Excellence in Plotting Contest (750\$)