CURRICULUM VITÆ

Dr.rer.nat. (PhD)

Johannes Leugering

Research Scholar Neuromorphic Computing

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Neuromorphic Computing @ UCSD

RESEARCH INTERESTS

- To leverage insights about metabolically efficient neural circuits for the development of *biologically inspired neuromorphic circuits*.
- To understand the theoretical mechanisms underlying *event-driven computation* by spiking neurons (with complex dendrites).
- To understand the biological principles and mechanisms of *self-organization* and learning through *sensorimotor contingencies*.

APPOINTMENTS & WORK EXPERIENCE

since 2023 — UC San Diego

Research Scholar

Research Scholar (PostDoc) in the Integrated Systems Neuroengineering Lab at the Bioengineering Dept.

2022-2023 — Fraunhofer IIS

Chief Scientist

Chief Scientist for AI at the Broadband and Broadcast Dept.

Coordinator of the competence area
Hardware-Aware Machine Learning at the ADA Lovelace Center

Assistant to the Speaker of the Fraunhofer
Next-Generation Computing Initiative

2019–2022 — Fraunhofer IIS

Research Scholar

Expert (PostDoc) for Spiking Neural Networks and Neuromorphic Hardware in the Embedded AI Group

2015–2019 — University Osnabrück

Research Assistant

Research Assitant (TVL-E13) in the Neuroinformatics Group

2012 — École Polytechnique Fédérale de Lausanne (EPFL)

Internship

3-month paid research internship in Lausanne, Switzerland

HIGHER EDUCATION

2021 University Osnabrück

PhD (Dr.rer.nat)

graduated summa cum laude · Chair of NEUROINFORMATICS: Prof. Gordon Pipa
Thesis: *Neural mechanisms of information processing and transmission.* (PDF)

2015 University Osnabrück

Master of Science

graduated summa cum laude · Program: COGNITIVE SCIENCE
Thesis: *Adaptation of Neuronal Activation Functions to Arbitrary Distributions of In- and Output* (PDF)

2014 University Osnabrück

Bachelor of Science

graduated summa cum laude · Program: COGNITIVE SCIENCE
Thesis: *Gain Modulation via Intrinsic Plasticity as a Candidate Mechanism for Reliable Information Transmission*

RELEVANT SKILLS

Social mentoring, public speaking, project management

Programming C/C++/C#, PYTHON, JULIA, (SYSTEM)VERILOG, CHP

Libraries & tools CADENCE™, SYSTEMC, DIFFERENTIALEQUATIONS.JL, PYMC3

Theory NEUROMORPHIC COMPUTING, THEORETICAL NEUROSCIENCE, STOCHASTIC PROCESSES, PROBABILISTIC MODELING, MACHINE LEARNING, ARTIFICIAL INTELLIGENCE

Languages

GERMAN · native
ENGLISH · fluent
RUSSIAN
ITALIAN · at very basic level (A1)
FRENCH

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