FRANZ SCHERR

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PUBLICATIONS

Zenke, F., Bohté, S. M., Clopath, C., Comşa, I. M., Göltz, J., Maass, W., Masquelier, T., Naud, R., Neftci, E. O., Petrovici, M. A., **Scherr, F.**, & Goodman, D. F.
Visualizing a joint future of neuroscience and neuromorphic engineering
Neuron (2021)

Scherr, F., & Maass, W.
Learning-to-learn for neuromorphic hardware.
To appear in Neuromorphic Computing and Engineering, IOP Publishing (2021)

Subramoney, A., Bellec, G., **Scherr, F.**, Legenstein, R., & Maass, W.
Revisiting the role of synaptic plasticity and network dynamics for fast learning in spiking neural networks.
Submitted (2021)

Bellec*, G., **Scherr*, F.**, Subramoney, A., Hajek, E., Salaj, D., Legenstein, R., & Maass, W.
A solution to the learning dilemma for recurrent networks of spiking neurons.
Nature Communications (2020)

Scherr, F., Stöckl, C., & Maass, W.
One-shot learning with spiking neural networks.
Submitted (2020)

Bellec*, G., **Scherr*, F.**, Hajek, E., Salaj, D., Subramoney, A., Legenstein, R., & Maass, W.
Eligibility Traces provide a data-inspired alternative to backpropagation through time
NeurIPS workshop on Real neurons and hidden units (Talk) (2019)

Subramoney*, A., Bellec*, G., **Scherr*, F.**, Hajek, E., Salaj, D., Legenstein, R., & Maass, W.
Slow processes of neurons enable a biologically plausible approximation to policy gradient
NeurIPS workshop on biological an artificial RL (Talk) (2019)

Subramoney, A., **Scherr, F.**, & Maass, W.
Reservoirs learn to learn
Submitted (2019)

Bohnstingl*, T., **Scherr*, F.**, & Maass, W.
Neuromorphic hardware learns to learn
Frontiers in Neuroscience (2019)

Bellec*, G., **Scherr*, F.**, Hajek, E., Salaj, D., Legenstein, R., & Maass, W.
Biologically inspired alternatives to backpropagation through time for learning in recurrent neural nets
arXiv (2019)

* equal contribution

EDUCATION

UNIVERSITY OF TECHNOLOGY, Graz, Austria — MAY 2018 - DEC 2020
Institute of Theoretical Computer Science

PhD in Computer science (with honours, GPA 4.0/4.0)
Advisor: **Prof. Wolfgang Maass**

Thesis: Learning from rewards and with priors in recurrent networks of artificial and spiking neurons

UNIVERSITY OF TECHNOLOGY, Graz, Austria — OCT 2016 - APR 2018
Institute of Theoretical Computer Science

MSc in Information and Computer Engineering (with honours, GPA 3.9/4.0)

Thesis: Spike-based agents for multi-armed bandits
Major: Computational Intelligence
Minor: Information Security

UNIVERSITY OF TECHNOLOGY, Graz, Austria — OCT 2014 - APR 2018
Institute of Theoretical Computer Science

BSc in Physics (with honours, GPA 3.8/4.0)

Thesis: Gradient-based optimization of AMEA parameters

UNIVERSITY OF TECHNOLOGY, Graz, Austria — OCT 2013 - APR 2016
Institute of Theoretical Computer Science

BSc in Information and Computer Engineering (with honours, GPA 3.7/4.0)

Thesis: Automated security proofs for symmetric ciphers

EXPERIENCE

ICML conference — FEB 2021

Reviewer

UNIVERSITY OF TECHNOLOGY, Graz, Austria — MAY 2018 - PRESENT
Institute of Theoretical Computer Science

Research Assistant

ANYCONCEPT, Graz, Austria — OCT 2020 - PRESENT

Academic Mentor

TREVER, Graz, Austria — JUN 2019 - PRESENT

Academic Mentor

NEURIPS conference — JUL 2020

Reviewer

UNIVERSITY OF TECHNOLOGY, Graz, Austria — MAR 2018 - JUN 2018
Institute of Applied Information Processing and Communications

Undergraduate teaching assistant in computer networks

UNIVERSITY OF TECHNOLOGY, Graz, Austria — MAR 2017 - JUN 2017
Institute of Applied Information Processing and Communications

Undergraduate teaching assistant in computer networks

UNIVERSITY OF TECHNOLOGY, Graz, Austria — AUG 2016 - SEP 2016
Institute of Applied Information Processing and Communications

Internship cryptography

UNIVERSITY OF TECHNOLOGY, Graz, Austria — OCT 2015 - JAN 2016
Institute of Analysis and Number Theory

Undergraduate teaching assistant in real analysis

ACHIEVEMENTS

INGE St. research award in category best publications — 2021

Poster prize — 2019
NeurIPS workshop on biological and artificial RL
UNIQUE research centre

Google hashcode challenge, placed 111/3012 — 2018

Academic Excellence Scholarship — 2017
University of Technology Graz

Academic Excellence Scholarship — 2017
University of Technology Graz

Academic Excellence Scholarship — 2016
University of Technology Graz

Academic Excellence Scholarship — 2014
University of Technology Graz

SKILLS

Expert level knowledge of TensorFlow (1 and 2) and Python

Analytical skills, broad understanding of diverse deep learning approaches

Applied skills in performing distributed training

Neuromorphic hardware

Creative skills in visualization

Last update: Feb 2021