Darjan Salaj

salaj.au@gmail.com | +43650 6826878 | Lagergasse 35A, 8020 Graz

EDUCATION

PhD candidate
Maschine Learning / Comp. Neuroscience
Prof. Wolfgang Maass, HBP
since 2018

MSc in Computer Science with distinction
Graz University of Technology
Apr 2017

BSc in Computer Science
Graz University of Technology
Sep 2015

LINKS

Github: **github.com/dsalaj**
Website: **dsalaj.com**

SKILLS

MACHINE LEARNING
Deep Learning • Tensorflow
Recurrent Networks • Numpy
pandas • Matplotlib • NEST

SPIKING NETWORKS
Working memory • Novel models
Neuromorphic • Temporal tasks

WEB - MOBILE
Vue.js • Django • PostgreSQL
Android • Flask • NodeJS
LESS • Sass • etc.

LANGUAGES
Python • JavaScript • Java
Kotlin • C# • etc.

DEVOPS - OTHER
CI and CD with Jenkins • REST API
vim • bash • linux • OOP
slurm • HPC usage • tmux
Agile - Scrum • Unit Testing • TDD

COMMUNICATION

ENGLISH
fluent

GERMAN
advanced

PEER-REVIEWED PUBLICATIONS [GOOGLE SCHOLAR]

Long short-term memory and learning-to-learn in networks of spiking neurons
G. Bellec*, D. Salaj*, A. Subramoney*, R. Legenstein, W. Maass; NIPS 2018

Eligibility traces provide a data-inspired alternative to backpropagation through time
G. Bellec*, F. Scherr*, E. Hajek, D. Salaj, A. Subramoney, R. Legenstein, W. Maass;
NeurIPS 2019 workshop: Real Neurons Hidden Units

EXPERIENCE

RESEARCH | deep learning & computational neuroscience
2018-now | Graz, AT | TUGraz IGI

- Developed and implemented state-of-the-art and novel models of RNNs.
- Increased the computational power of spiking RNNs to the level of state-of-the-art artificial RNNs on benchmark tasks.
- Under the constraints of neuromorphic hardware (Intel Loihi, SpiNNaker) adapted and scaled up models to achieve new state-of-the-art.

MASTER THESIS | working memory in spiking neural networks
2017-2018 | Graz, AT | TUGraz IGI | Prof. Wolfgang Maass | Prof. Robert Legenstein
- "Spike-based LSTM-like Modules in Neural Networks"
- Developed and benchmarked novel RNN models in Tensorflow.

L2L | learning to learn framework
2017 | Graz, AT | TUGraz IGI
- Developing Pypet based gradient-free optimization framework.
- Integration of NEST module SPORE as optimizee.

MYTHING.COM | full-stack web development | Django
2015-2018 | Graz, AT
- Core full-stack developer of 3D printing web marketplace.
- Django • PostgreSQL • Docker • Celery • Jenkins • AWS • Scrapy

TUTORING | undergraduate classes
2014-2015 | Graz, AT | TUGraz ISDS | Prof. Keith Andrews
- Internet and New Media (2014/15 WS)
- Human-Computer Interaction (2015 SS, 2016 SS)

POCKET CODE | web development
2014-2015 | Graz, AT | TUGraz IST | Prof. Wolfgang Slany
- Web developer and designer for Catrobat project (**developer.catrobat.org**)

WINNING.AT | web development
2012-2013 | Graz, AT
- Web development using: handlebars, LESS, NodeJS and SQL.

OTHER

2019   HBP workshop @ University of Hertfordshire
- HBP SP9 workshop @ Fürberg
- Intel INRC workshop @ Graz

2018   Human Brain Project (HBP) summit @ Maastricht, Netherlands
- Intel INRC workshop @ Reykjavík, Iceland
- HBP SP9 workshop @ Fürberg
- Learning to Learn workshop @ Fürberg am Wolfgangsee