

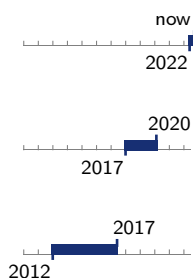
Arash Golmohammadi

M.Sc. in Computational Science & Engineering

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28 years old



Education



Universitätsmedizin Göttingen *PhD Researcher*

SFB 1286: *Quantitative Synaptology* – Computational network and synaptic dynamics @ [Tetzlab](#)

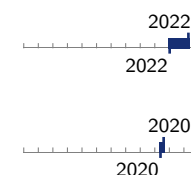
EPFL *M.Sc. in Computational Science and Engineering*

Thesis: *Prediction of stellar atmospheric parameters from spectra with machine learning*

Sharif University of Technology *B.Sc. in Physics & Mechanical Engineering (double major)*

Thesis: *Simulating wind flow over turbine blade equipped with piezoelectric synthetic jet*

Experiences



Researcher @ *Universität Rostock*, Rostock, Germany

DFG CRC TRR 295: *Retuning dynamic motor network disorders using neuromodulation*

Intern @ *Lab of Computational Mathematics and Simulation Science (MCSS)*, EPFL, Switzerland

Curated a computational data set for physics-informed machine learning by simulating turbulent fluid flow

Technical skills

Programming Python (fluent), Bash, MATLAB, C++, HTML, Sass

Packages brian, pytorch, scikit-learn, statmodels, matplotlib, LFPy, NGsolve, FEniCS

Other git, Linux, Windows, L^AT_EX, MS office, Paraview

Honors and Certificates

Certificate Introduction to Dynamical Systems and Chaos

Santa Fe Institute, 2021

Certificate Getting started with AWS Machine Learning

Coursera, 2020

Gold Medal International Olympiad on Astronomy and Astrophysics

Brazil, 2012

Gold Medal National Astronomy and Astrophysics Olympiad

Iran, 2011

Languages

- English (C1)
- French, German (A1)
- Persian (Native)

Selected Coursework

- Biological modeling of NN
- Numerical integration of SDEs
- Deep learning
- Digital signal processing
- Computational physics
- Statistical physics and Thermodynamics
- Quantum mechanics
- Optimization for machine learning

Selected Projects

2022

Basal Ganglia mean-field network *A demonstration of non-invertibility of basal ganglia network in Parkinsonian patients*

@ 2nd DBS expert summit conference ([link to the implementation repository](#))

2021

Electrode and Tissue Potentials During Brain Stimulation *An exact simulation of the Laplace problem via extended finite element method to compute the recorded voltage of electrode contacts*

@ DFG 295 RETUNE fall school ([link to the implementation repository](#))

2019

Stochastic differential Equation Integrator *Implemented the first-order Milstein–Platen stochastic integration scheme in Python*

@ EPFL (course project)

2019

FitzHugh-Nagumo Solver *Implemented a solver for the non-linear FitzHugh-Nagumo problem with analytical proof of its region of convergence in MATLAB*

@ EPFL (course project)

2019

Variational Inference *Optimized a hierarchical surrogate model with Bayesian inference to estimate sparsity confidence in Python*

@ Lab of Scientific Computing and Uncertainty Quantification ([CSQI](#)), EPFL (semester project)

2018

EEG Classifier *Implemented a predictive model for finger movement with a test accuracy of over 70% using EEG timeseries in PyTorch*

@ EPFL (course project)

2018

Simulating Biological Neural Systems *Implemented case studies of the noisy leaky integrate-and-fire neuron, Hopfield network, short-term and spatial working memory in Python*

@ EPFL (course project)

2017

Hebbian Learning in Spin-Glass *Modeled and optimized the energy landscape of a spin-glass by implementing a single-layer neural network in C*

@ EPFL (course project)

2017

Monte Carlo Integrator *Implemented a modular Metropolis-Hastings integrator for L^2 functions in C++*

@ EPFL (course project)

Extra-curricular Activities

2019

Iranian student association at EPFL ([IRSA](#)) *Treasurer*

2018

Personal Interests

I like listening to classical and film music, and actively listen to podcasts with critical thinking theme. I blog, cycle, and love stargazing.

References

References available upon request.