Shayan Aziznejad

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Summary of Qualifications

One-line Summary	Applied mathematician with 7+ years of experience in trustworthy machine learning.
Areas of Expertise	Machine Learning, Probability Theory, Statistics, Optimization
Scientific Awards	Swiss NSF Fellowship, Best Paper Award Recipient, Maths Olympiad Gold Medallist
Publication Track	Author of 17 journal articles in Machine Learning, Probability theory, and Optimization.

Professional Experience

October 2022 – Now

Machine Learning Researcher, Daedalean AI, Zürich, Switzerland
- Proving performance guarantees for safety-critical ML-based aviation systems.
- Quantifying, Enforcing, and Verifying AI trustworthiness objectives of certification authorities.
- Collaboration with systems engineers, certification experts, and ML engineers.
- Direct reports: 1 MLE, 1 SWE.
- Hiring committee of 10+ candidates.

August 2017 – September 2022

Graduate Research Assistant, *Biomedical Imaging Group*, EPFL
- Developed a unified framework for analyzing optimization problems that arise in various domains of modern data science. Derived numerical schemes from the developed framework, e.g.
  - a PyTorch module for training piecewise linear activation functions of deep neural networks;
  - a nonparametric method for learning input-output mappings of ReLU neural networks.
- Supervised 11 Master's students for their thesis, semester, and internship projects.

Software Skills

Programming	Python, Rust, MATLAB
Data Analysis	SQL, Polars, Pandas
Data Visualization	Grafana, Matplotlib, Seaborn, Plotly
Misc	LaTeX, Git, Bash, Linux, Kubernetes

Professional Expertise

Mathematics	Optimization, Linear Algebra, Probability Theory, High-dimensional Statistics
Machine Learning	Supervised, Unsupervised, Deep
Transferable	Problem Solving, Teamwork, Verbal/Oral Communication, Leadership, Flexibility
Language	English (C2), French (B1), German (B1), Persian (native), Azerbaijani (native)
Executive Staff	Student association of the EE department (RESANA) at SUT

Education

August 2017–June 2022	**Ph.D. in Electrical Engineering**, École polytechnique fédérale de Lausanne (EPFL)
October–December 2021	**Visiting Ph.D.**, Scuola Normale Superiore (SNS) di Pisa
September 2012–June 2017	**B.Sc. in Electrical Engineering**, Sharif University of Technology (SUT)
September 2012–June 2017	**B.Sc. in Pure Mathematics**, SUT

Awards

2021	**Fellowship**, *Research Grant of 108,000 CHF*, Swiss National Science Foundations
2019	**Best Student Paper Award**, *ICASSP**, Brighton, UK ○ 44th IEEE International Conference on Acoustics, Speech, and Signal Processing
2011	**Gold Medal**, *National Mathematical Olympiad*, Iran ○ Granted the membership to Iran's national elite foundation

Selected Publications (Check [My Google Scholar](#) for the Full List)

1st author	**Measuring Complexity of Learning Schemes Using Hessian Schatten Total-Variation**, *SIAM Journal on Mathematics of Data Science*, 2023
1st author	**Linear Inverse Problems with Hessian-Schatten Total-Variation**, *Calculus of Variations and Partial Differential Equations*, 2023
1st author	**Wavelet Compressibility of Compound Poisson Processes**, *IEEE Transactions on Information Theory*, 2022
1st author	**Multikernel Regression with Sparsity Constraint**, *SIAM Journal on Mathematics of Data Science*, 2021
1st author	**Deep Neural Networks with Trainable Activations and Controlled Lipschitz Constant**, *IEEE Transactions on Signal Processing*, 2020
1st author	**Wavelet Analysis of the Besov Regularity of Lévy White Noises**, *Electronic Journal of Probability*, 2020
2nd author	**Convex Optimization in Sums of Banach Spaces**, *Applied and Computational Harmonic Analysis,*, 2022

Personal Details

General	30 years old, married
Nationality	Iranian, Permit C
Interests	Running, Playing music, Cinema, Cooking

References will be provided upon request.   August 13, 2024