

Mehrsa Pourya

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Summary

Senior PhD student with hands-on experience building deep learning models for computational imaging. Strong publication record and communication skills, proven ability to design, implement, and evaluate real-world ML pipelines. I am particularly drawn to problems that combine domain knowledge and modeling to extract insights from complex data—currently seeking opportunities in industry as an ML researcher or intern.

Research Interests

Deep Architecture Design, Attention Mechanism, Generative Models, Diffusion Models, Computer Vision

Education

EPFL, PhD in Electrical Engineering July 2021 – Present

- GPA: 5.73/6.0
- **Coursework:** Image Processing (6/6), Mathematics for Data (6/6), Deep Learning (5.5/6)
- **Thesis Focus:** Deep Learning for Computational Imaging, **Advisor:** Prof. Michael Unser

Sharif University of Technology, BS in Electrical Engineering Sept 2016 – July 2020

- GPA: 18.23/20
- **Coursework:** Computer Vision (19.4/20), Parallel Programming and Architecture (19.6/20), Statistics and Applications (20/20), Numerical Computations (20/20), Data Structures and Algorithms (18.9/20), ...
- **BSc Project Focus:** Image Sharpness Estimation using Graph Signal Processing, **Advisor:** Prof. Arash Amini

Experience

* denotes first author publications

Research Assistant, EPFL – Lausanne, Switzerland July 2021 – Present

- Designed and implemented a physics-informed and attentive network for image reconstruction that achieves competitive performance for multiple tasks (superresolution, deblurring, MRI reconstruction) with interpretable and robust outputs ([Project Page](#), [GitHub](#), Papers: [ICML 2025*](#), [NeurIPS Workshop 2023](#), [NFAO 2024*](#))
- Developed a reconstruction framework using continuous-domain representations of images that outperforms existing pixel-based approaches. The framework is accompanied by a multi-resolution solver that allows for fast reconstruction of high-resolution images (Papers: [IEEE TCI 2024*](#), [IEEE ISBI 2024*](#))
- Developed a novel regression method offering comparable performance to neural networks with interpretable outputs and explicit geometric complexity control ([GitHub](#), Paper: [IEEE OJSP 2023*](#))

Teaching and Supervision, EPFL – Lausanne, Switzerland Sep 2021 – Present

- Teaching Assistant for Image Processing I and Signal and Systems I and II (~200 students)
- Supervised 8 master projects and internships, including a Master's thesis on Diffusion Models for Magnetic Resonance Imaging Reconstruction in collaboration with Siemens Healthineers

Research Intern, EPFL – Remote July 2020 – Nov 2021

- Developed a multiscale graph-based clustering method for point-cloud data (Paper: [IEEE ISBI 2021*](#))

Programming & Tools

Languages: Python, MATLAB, R, Java, C, C++ (CUDA)

Python Libraries PyTorch, scikit-learn, OpenCV, scikit-image, NumPy, CuPy, SciPy, pandas

Others Git, GitHub, \LaTeX , Visual Studio Code

Honors and Awards

Best Paper Award for Oral Presentation (third place), IEEE ISBI 2024, Athens, Greece [[Link](#)].

Best Poster Award (first place), Math-ML for Image Analysis 2024, Bologna, Italy [[Link](#)].

Best 3-min Presentation Award (second place), EPFL EDEE Scientific Day 2024, Lausanne, Switzerland.

Ranked among Top 0.1% (176/162879) participants in the engineering university entrance test, 2016.