Aliasghar Pourghani

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Education

Sharif University of Technology, Electrical Engineering, B.Sc. (18.09/20) *2019 – Present*
Communications Systems and Networks

Sharif University of Technology, Applied Mathematics, Minor (19.2/20) *2021 – Present*

Research Interests

- Deep/Machine Learning (Theory and Applications)
- Federated Learning
- NLP and LLMs
- Computer Vision and Generative Models

Selected Research Experiences

Sensor Fusion for Autonomous Driving Systems (Bachelor Thesis) *Dec. 2022 – Oct. 2023*
AICD Lab, Supervisors: Dr. A. Fotowat Ahmadi, Dr. Z. Kavehvash *Sharif University of Technology*

- Development of a novel and efficient fusion algorithm named SideFusion to fuse camera and radar data in order to improve distance and velocity estimation. **Selected as on of the distinguished bachelor projects of the electrical engineering department.**

Reliable Face Authentication on Low-Resource Devices *Summer 2022*
SSEC Lab, Supervisor: Dr. B. Khalaj *Internship, Tehran*

- Implementation of a reliable face authentication algorithm on a low resource device(Orange Pi3)

Machine Learning Engineer Intern *Summer 2023*
MCI Next Co., R&D team *Internship, Tehran*

- Developing attention based recommendation systems for a social media. In this internship I worked with large language models, sequential models and large datasets

Technical and Soft Skills

Programming Languages	Python(PyTorch, Tensorflow, COBRA, Transformers, RecBole, Pandas, Numpy, CVXPY, ...), Java, C/C++, R
Related Software and Tools	MATLAB, Docker, GNS3, Wireshark, LaTeX, PSpice, LTSpice
Operating Systems	GNU/Linux(Ubuntu, CentOS), Microsoft Windows
Soft Skills	Hard Working, Team Work, Enthusiastic to Learn New Topics

Honors and Awards

Ranked 53 out of +160000 applicants	National University Entrance Exam(Konkur)	*2019*
Mathematics Olympiad Silver Medal	National Olympiad of Mathematics	*2018*
Mathematics Olympiad Honors Diploma	National Olympiad of Mathematics	*2017*
Distinguished Bachelor Project	EE Department at SUT	*2023*
Member of National Elites Foundation	Iran's National Elites Foundation	*Since 2017*

Selected Courses

- Deep Learning
- Neuroscience
- Artificial Intelligence
- Convex Optimization
- Statistical Learning
- Computational Systems Biology
- Computer Vision LAB
- Differential Privacy
- Information Theory
- NLP with DL (CS224n)

Course Projects

Multimodal Sentiment Analysis *Fall 2022*
Deep Learning Course Project *Sharif University of Technology*

- Implementation of a sentiment analyser consisting of transformers and CNN backbones, in order to classify sentiments of movie scenes

BP-Spice: A Software to design simulate and visualize circuits *Spring 2021*
Object Oeiented Programmign Course Project *Sharif University of Technology*

- An Object Oriented software in Java, in which users can design a circuit, then visualize it and simulate it with different settings.

Image Denoising Using Dictionary Learning *Fall 2022*
Linear Algebra Course Project *Sharif University of Technology*

- Denoising images using combinations of various methods of sparse coding (MP, OMP, WMP), and dictionary learning (MOD, KSVD, A-KSVD)

Isolation of Relevant Visual Features from Random Stimuli for Cortical Complex Cells *Spring 2021*
Neuroscience Course Project *Sharif University of Technology*

- Implementation of "Isolation of Relevant Visual Features from Random Stimuli for Cortical Complex Cells" paper in Matlab

Teaching Experience

- Deep Learning (Graduate)
- Machine Learning
- Computer Architecture ($\times 2$)
- Communication Systems
- Theory of Circuits
- Engineering Mathematics

Language Proficiency

English TOEFL score: 109 (R:28, L:30, S:25, W:26) *Oct.7Th*
Azerbaijani Native-Bilingual
Persian Native-Bilingual