Arshia Afzal

PH.D. STUDENT @ EPFL

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Personal Information

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Publication Google Scholar

Education

École polytechnique fédérale de Lausanne, EPFL   *Lausanne, Switzerland*

PH.D. IN ELECTRICAL ENGINEERING   *Present*

- **Integrated Neurotechnologies Laboratory (INL)**, Supervisor: Mahsa Shoaran
- **Laboratory for Information and Inference Systems (LIONS)**, Supervisor: Volkan Cevher

Sharif University of Technology   *Tehran, Iran*

BACHELOR OF ELECTRICAL ENGINEERING, GPA: 3.92/4.0   *September 2022*

Ranked amongst the top **10%** of electrical engineering class of 2022

Publications

Space-time self attention for graph signal processing

- **Author:** **Arshia Afzal**, Francesco Tonin, Volkan Cevher, Mahsa Shoaran
- **Conference:** Submitted to NeuRIPS, 2024

REST: Efficient and Accelerated EEG Seizure Analysis through Residual State Updates

- **Author:** **Arshia Afzal**, Grigorios Chrysos, Volkan Cevher, Mahsa Shoaran
- **Conference:** ICML, 2024

Challenges and opportunities of edge AI for next-generation implantable BMIs

- **Author:** Mohammadali Shaeri, **Arshia Afzal**, Mahsa Shoaran
- **Conference:** IEEE, AICAS 2022

Network synchronization deficits caused by dementia and Alzheimer's disease serve as topographical biomarkers: a pilot study

- **Author:** MohaamadJavad Sedghizadeh, Hamid Aghajan, Zahra Vahabi, Nahaleh Fatemi, **Arshia Afzal**
- **Journal:** Brain Structure and Function, 2022

Gamma phase synchronization during olfactory stimulation as a marker for Alzheimer's disease

- **Author:** **Arshia Afzal**, MohaamadJavad Sedghizadeh, Hamid Aghajan, Zahra Vahabi
- **Journal:** Alzheimer's & Dementia, 2021

Behavior of olfactory-related frontal lobe oscillations in Alzheimer's disease and MCI: A pilot study

- **Author:** Seyyedeh Nahaleh Fatemi, Hamid Aghajan, Zahra Vahabi, **Arshia Afzal**, Mohammad Javad Sedghizadeh
- **Journal:** International Journal of Psychophysiology, 2021

Honors and Awards

August 2024	Among **the 4 candidates** selected from EPFL for Receiving **Apple** Ph.D. fellowship 2024
August 2024	Among **the 4 candidates** selected from EPFL for Receiving **IBM** Ph.D. fellowship 2024
June 2024	**Best Poster Award** of Neuro-X institute retreat 2024
September 2022	**Ranked amongst the top 10%** of electrical engineering class at Sharif University of Technology
June 2020	Selected at **E3 summer internship program** for carrying summer internship at **Integrated Neuroscience Laboratory, EPFL University**
July 2018	**Bronze medalist of International Physics Olympiad** (IPHO-2018/Lisbon)
Summer 2017	**Gold medalist** of the 30th national Physics Olympiad
June 2019	Member of National Elite Foundation of Iran

Language

Persian	Mother tongue
English	Fluent
French	A1 Level

Work Experience

DecentraLab (DLab) *Azadi Avnue, Tehran, Iran*

Software Engineer *December 2020 - September 2022*

- Working on a project about Multi camera Object detection using federated learning and Edge computing funded by Iran's National Elites Foundation.
- Supervisor: Professor Mohammad Ali Maddahali

Augmented Intelligence Research Laboratory (AIRLab) *Azadi Avnue, Tehran, Iran*

Research Assistant *June 2020 - September 2022*

- Research assistant at Sharif AIRLab with focus on ML, AI, Signal Processing, and Neuroscience. Processing EEG data and extracting biomarkers for classifying AD, Normal and MCI patients.
- Supervisor: Professor Hamid Aghajan

Teaching Experiences

Teaching Assistant at EPFL

Course: Mathematics of Data *Present*

- **Responsibility:** Designing handouts and preparing slides for part of the course

Course: Advanced Machine Learning *February 2023*

- **Responsibility:** Attending TA sessions and preparing homework. Also, grading final project.

Teaching Assistant at Sharif University of Technology

Course: Signals and Systems *Present*

- **Responsibility:** Head TA, managing handouts, TA sessions, Homeworks and leading other TA team members.

Course: Neuroscience of Learning, Memory, and Cognition *January 2021*

- **Responsibility:** Design and grade homeworks.

Course: Engineering Mathematics *January 2022*

- **Responsibility:** Head TA, managing handouts, TA sessions, Homeworks and leading other TA team members.

Course: Digital Circuits and Lab *January 2021*

- **Responsibility:** Attend TA sessions and handle course web page.

Teaching Physics *Young scholars club*

Member of committee *July 2020*

AllameHeli high school

- **Responsibility:** Member of committee of national physics Olympiad, and designer of laboratory exams.

AllameHeli high school *July 2021*

- **Responsibility:** Teaching and tutoring younger student who wants to participate at physics Olympiad.