

Borna Khodabandeh

Curriculum Vitae

"Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do." - Steve Jobs

Education

- 2021–2025 **Sharif University of Technology**, Bachelor's degree, Tehran, GPA – 19.60/20.
At present, I am a student of electrical engineering and physics(dual major) at Sharif University of Technology
- 2021 **IPHO training**, Young Scholars Club, Tehran, IPHO.
Jan–Aug
- 2018–2021 **High school diploma**, AE Highschool, Tehran, GPA – 19.69/20.00.

Projects

- Present **Fast Graph Learning Algorithms for NLP Applications**, MULTIMEDIA LAB(SUT) ,
Potential applications: Semantic search, document classification, and question answering.,
Proficiencies applied: Graph signal processing, natural language processing. .
Developed a novel graph learning algorithm for efficient processing of large, sparse semantic graphs in the field of natural language processing. The project focuses on leveraging sparsity to reduce computational overhead and accelerate the processing of graphs with extensive node counts. This innovation holds the promise of capturing more nuanced semantic connections between words, thereby enhancing natural language comprehension.
- 2023 **Analysis of Phase Locking Value during Olfactory Stimulation as a Biomarker for Alzheimer's Disease in EEG Signals**, AIRLABS(SUT) , **source** .
Code and analysis for using EEG phase locking value and other phase amplitude coupling metrics during olfactory stimulation as an Alzheimer's disease biomarker.
- 2023 **8051 microprofessor**, SHARIF UNIVERSITY OF TECHNOLOGY(SUT) , **source** .
Emulator for 8051 microprocessor implementing programming and execution of assembly code in software. Models internal registers and cycles of the processor.
- 2022 **Shweeter**, SHARIF UNIVERSITY OF TECHNOLOGY(SUT), **source**.
We developed a social media platform using Java and SQL by a team of three (see GitHub repository for collaborators)
- 2021 **Head Football**, SHARIF UNIVERSITY OF TECHNOLOGY(SUT), **source**.
this is a simple head football game made in the c++ language using the SDL graphics libraries.

Experience

Teaching Experience

Engineering Probability and Statistics Teaching Assistant
Linear Algebra Teaching Committee Coordinator
Linear Algebra Teaching Assistant
Engineering Mathematics Teaching Assistant
Electromagnetism Teaching Assistant

Electronics(II) Course Teaching Assistant
Electrical Circuits Lab Teaching Assistant
Advanced Programming Teaching Assistant
Basic Programming Teaching Assistant

Selected Courses

Graduate Graph Signal Processing - (Currently Enrolled)
Graduate Deep Learning - (Currently Enrolled)
Probability and Statistics - (20.0/20.0)
Linear Algebra - (20.0/20.0)
Signals and systems - (20.0/20.0)

Online Courses

Coursera Machine Learning Specialization
Coursera Deep Learning Specialization

Work

2021–Present **Physics Tutor.**

I have been working as a physics tutor in a number of top high school in tehran and private educational organizations.

2022 **MCI Academy.**

I served as an intern at MCI Academy, where my responsibilities encompassed diverse projects, including the development of LTE channel emulators and the seamless integration of Artificial Intelligence into the technology stack.

Awards

2020 IPHO International Silver Medalist
2020 National Physics Olympiad Gold Medalist

Computer skills

Basic JAVASCRIPT, HTML, COMSOL, AWR
Intermediate GOLANG, JAVA, C/C++, PYTHON, \LaTeX , MATLAB, SIMULINK , Linux
Technologies POSTGRESQL, TENSORFLOW, PYTORCH, NUMPY, SCIPY, SCIKIT-LEARN, GSPBOX