Bahador Rousta Jorshary

Tehran, IRAN | bahador.jorshary@gmail.com | +989127927986
bahadorrj.github.io | bahador-rousta-jorshary | bahadorrj

EDUCATION

B.Sc. Electrical Engineering — Electronics

Khajeh Nasir Toosi University of Technology (KNTU), Tehran, IRAN Sep 2020 — Sep 2025

- GPA: 17.33/20 (or 3.47/4)
- Thesis Title: Design of a data acquisition system for simultaneous two-stage deep brain stimulation and signal recording
- Supervisor: Dr. Mahdi Aliyari Shoreehdeli
- Relevant Coursework (out of 20):
  Differential Equations (20), Engineering Mathematics (20), Computer Programming (20), Computer Networks II (18.5), Advanced Programming (17.4), Electrical Circuits I (18.4), Digital Circuits II (18.17), Electric Machines I (18.89).

AWARDS AND HONORS

- Graduated in the top 5% of class (CGPA: 17.33/20, equivalent to 3.47/4.0)
- Ranked in the top 1% among more than 155,000 participants in the Iranian University Entrance Exam for the Bachelor's degree

RESEARCH INTERESTS

- Deep Learning for Experimental Science
- Software–Hardware Integration and Embeddable Devices
- Intelligent Embedded & IoT Systems
- Human–Computer Interaction

RESEARCH AND PROJECTS

EDXRF Semi-Quantitative Analysis Software

Project conducted at **Control System Abzar Nowin (CSAN) Co**, Tehran, Iran

- Delivered a semi-quantitative EDXRF data processing pipeline integrated with the company's quantitative tools
- Built a full workflow using the Fundamental Parameters method for elemental composition extraction
- Created a reusable Python library enabling scripted analysis workflows
- Designed and implemented a PyQt GUI for configurable analysis and interactive visualization

Spectra Background Noise Removal API

Project conducted at **Control System Abzar Nowin (CSAN) Co**, Tehran, Iran

- Developed an algorithm to remove background noise from X-ray spectra, improving signal quality for semi-quantitative analysis.
- Integrated the algorithm into the existing EDXRF pipeline, enabling more accurate and reproducible elemental composition calculations.

Neuroscience Laboratory Software

Bachelor's Final Project

- Designed a GUI platform integrating hardware control, neural signal processing, and behavioral video analysis
- Implemented real-time DBS (Deep Brain Stimulation) control protocols for experimental studies in mice
- Developed image-processing pipelines for head/body/skeleton tracking and behavioral quantification
- Synchronized LFP (Local Field Potential) recordings with video data for multimodal analysis and visualization

EXPERIENCES

Teaching Experience

- **Computer Programming — Teaching Assistant**
  Lecturer: Mr. Mahdi Zamanian Sep 2022 — Dec 2022
  - Guided students through laboratory sessions and problem-solving activities.
  - Designed and graded assignments to reinforce programming fundamentals.

Professional Experience

- **Software Developer**
  Control System Abzar Nowin (CSAN) Co, Tehran, Iran Sep 2022 — Present
  - Designed and implemented software tools and GUIs for XRF data analysis workflows
- **Software Developer Intern**
  Control System Abzar Nowin (CSAN) Co, Tehran, Iran Jun 2022 — Sep 2022
  - Developed a spectral peak detection tool to identify and analyze elemental excitations

SKILLS

- Programming Languages: Python, Java, C, C++, JavaScript, MATLAB
- Frameworks and Tools: OpenCV, Qt, PyTorch, FastAPI, Django, Flask, SQL
- Software Applications: PSpice, Proteus, Altium Designer, Microsoft Office
- Operating Systems: Windows, Linux (Ubuntu)

MEMBERSHIPS

IEEE KNTU Student Branch Aug 2023 — Dec 2023

- Content Coordinator: Organizing conferences and events. Contributed in holding the third International Conference on Electrical Machines and Drivers (ICEMD)

LANGUAGES

- Persian: Native
- English: Full professional proficiency
  - IELTS Academic Exam: Overall 8.0 (Listening: 8.5, Reading: 9.0, Writing: 7.0, Speaking: 7.0)

REFRENCES

1. *Dr. Mahdi Aliyari Shoorehdeli: aliyari@kntu.ac.ir*
2. *Mr. Alireza Salami: Salami@ircsan.com*