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EDUCATION

B.Sc. Electrical Engineering – Electronics

Khajeh Nasir Toosi University of Technology (KNTU), Tehran, IRAN

Sep 2020 – Sep 2025

- CGPA: 17.36/20 (WES: 3.68/4)
- 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 among the top 5% of students in B.Sc. Electrical Engineering
- 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.

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)

REFERENCES

1. Dr. Mahdi Aliyari Shoorehdeli – Associate Professor, Faculty of Electrical Engineering, Department of Control, Khajeh Nasir Toosi University of Technology
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2. Mr. Alireza Salami – Managing Director, Control Ssystem Abzar Nowin Co.
Email: Salami@ircsan.com