Mahban Gholijafari

Amirkabir University of Technology (Tehran Polytechnic) | Electrical Engineering Department

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Summary

B.Sc. Electrical Engineering student at Amirkabir University of Technology, IRAN's Top-ranked University, with a 3.88 GPA. Passionate about Robotics. Worked as a researcher and IoT engineer, implementing multiple projects by MATLAB, having Electrical Circuits I and II courses teaching assistant experience for three semesters, and currently working on a Fuzzy-PID controller as a thesis project.

Research Interests: Machine Learning, Mathematics, Control, Robotics, Image Processing and Computer Vision, Digital Signal Processing

Education

B.Sc. Electrical Engineering

Tehran, Iran

Amirkabir University of Technology (Tehran Polytechnic) *May 2018 - May 2022*

- **GPA: 3.88/4.0 (17.95/20)**
- Field(s) of Study: Control Engineering
- Thesis: Construction and Control of a Three-Link Robot using a Fuzzy–PID Controller

High school Diploma in Mathematics and Physics

Tehran, Iran

Farzanegan II (National Organization for Development of Exceptional Talent) *July 2014 - July 2018*

- **GPA: 19.81/20**

Teaching Experience

Teaching Assistant

Amirkabir University

- Electric Circuits I, EE
- Lecturer: **Dr. M. Khosravi**
- Spring 2022 - Present

Teaching Assistant

Amirkabir University

- Electric Circuits II, EE
- Lecturer: **Dr. M. Karrari**
- Fall 2021 - Present

Work & Volunteer Experience

IoT Engineer

Tehran, Iran

TecNikan *May 2022 - October 2022*

- Smart Home
- Obtained skills: C(programming language), C++, MySQL, ATmelAVR, Linux
- Simple template of handsfree-drawer using stepper motor and ATmega16: **Github**

Member of the Innovation Center at Electrical Engineering Department

Tehran, Iran

Science and Technology Park - Amirkabir University of Technology *April 2022 - Present*

- Executive team member

Member of Student Committee

Tehran, Iran

ICRoM - K. N. Toosi University of Technology *August 2022 - Present*

- Executive team member
- The 10th RSI international conference on robotics and mechatronics

Researcher (Internship)

Tehran, Iran

Amirkabir University of Technology *July 2021 - September 2021*

- Tank gauging using fiber optic technology
- Fiber optic sensors have been around for more than thirty years and have been successfully implemented in different areas like strain monitoring, inertial navigation, chemical substance detecting, and underwater acoustic sensing. These sensors have many characteristic advantages such as their contact with explosive materials or in fire-hazardous environments, small size and weight, electrical insulation, electromagnetic interference resistance, and prompt response.

Skills

MATLAB	Control System Toolbox, Signal Processing Toolbox, Simscape Multibody, App Designer, Fuzzy Logic Toolbox
C & C++	AVR Microcontroller, ARM Microcontroller, STM32CubeMX, Linux, Arduino, QT
Python	Jupyter Notebooks, NumPy, TensorFlow, Matplotlib, Tkinter
Robotics	Altium Designer, SOLIDWORKS, Code Vision AVR, PLC Ladder Logic, SIMATIC STEP 7, Proteus
Other Skills	GitHub, Microsoft Office ,LaTeX, Basketball, Teamwork, Problem Solving

Selected Academic Projects

Construction and Control of a Three-Link Robot Using a Fuzzy–PID Controller

Bachelor of Science Thesis *July 2022 - Present*

- Supervisor: **Dr. M. Shafiee**
- Implemented by **MATLAB & SOLIDWORKS**
- Requirements: forward kinematics analysis, inverse kinematics analysis, dynamic calculation, trajectory planning, and controller design.

Construction and Control of a RRR Robot Manipulator

Introduction to Robotics Course Project — *April 2022 - July 2022*

- Lecturer: **Dr. I. Sharifi**
- Design of the controller with **MATLAB** and design of the robot with **SOLIDWORKS**: **GitHub**
- Aiming to design a different controller for the RS006L-A Kawasaki 3DOF robotic arm model using inverse kinematics analysis and dynamic.

Design a Fuzzy Logic Controller for a Rotary Flexible Joint Robotic Arm

Introduction to Computational Intelligence Course Project — *December 2021 - February 2022*

- Lecturer: **Dr. I. Sharifi**
- Design a fuzzy logic controller with **MATLAB** : **GitHub**
- Designing a fuzzy logic feedback controller (FLC) in order to control a desired tip angle position of a rotary flexible joint robotic arm.

Deep Residual Learning for Image Recognition

Introduction to Computational Intelligence Course Project — *December 2021 - January 2022*

- Lecturer: **Dr. H. Talebi**
- Image classification using **ResNet** & **Python**: **GitHub**

Computational Intelligence Laboratory Projects

Introduction to Computational Intelligence — *December 2021 - February 2022*

- Codes and reports: **Github**
- Topics: Neural network - Hopfield network - RBF - K-means algorithm - Fuzzy controller designing

Nonlinear Control of the Inverted Pendulum

Modern Control Course Project — *November 2021 - January 2022*

- Lecturer: **Dr. H. Atrianfar**
- Study the controllability and observability, and then linearization of the system. Design of a controller and observer with **MATLAB**: **GitHub**

Honors & Rewards

Ranked 3rd among Control Bachelor's Students, by order of GPA
Amirkabir University of Technology (Tehran Polytechnic) — *July 2022*

Ranked 576 among 144,000 students in National University Entrance Exam of Iran
National Organization for Educational Testing — *July 2018*

1st place in Junior Soccer B-Light Weight Super Team
Robo Cup Iran Open — *April 2015*

Selected Licenses & Certifications

Machine Learning

Stanford Online

- Machie learning offered through Coursera using **MATLAB**
- Credential ID 2BZ6MYJRWKCU

Python Data Structures

University of Michigan

- Offered through Coursera
- Credential ID HEUPGQBQZA6F

Robotics: Aerial Robotics

University of Pennsylvania

- Offered through Coursera
- Credential ID A9MS269BRS9A

Supervised Machine Learning

DeepLearning.AI & Stanford Online

- Regression and classification offered through Coursera using **Python**
- Credential ID: DDNC3ZNW6M8E

Programming for Everybody

University of Michigan

- Getting started with Python offered through Coursera
- Credential ID J8552RZL8LE4

Altium Designer

Tehran Institute of Technology

- Credential ID 633797

Selected Academic Courses

Introduction to Robotics
- Grade: A+

Digital Signal Processing
- Grade: A+

Engineering Mathematics
- Grade: A+

Computer Programming
- Grade: A+

Computational Intelligence
- Grade: A+

Instrumentation
- Grade: A+

Linear Algebra
- Grade: A+

Engineering Economics
- Grade: A+

Language

TOEFL iBT Score: **108**, Reading: 25; Listening: 29; Speaking: 26; Writing: 28

References

Available per Request