


MOHAMMADALI SHAKERDARGAH

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Education

University of Tehran

September 2017 – Present

Bachelor of Science in **Electrical Engineering** (Control)

Tehran, Iran

- Overall GPA (Last two years): **17.56/20 (3.77/4)**
- Cumulative GPA: 16.8/20 (3.49/4)

Minor in **Computer Engineering**

- Cumulative GPA: **17.8/20 (4/4)**

Imam Khomeini High School

September 2013 – June 2017

Diploma in Mathematics and Physics Discipline

Bushehr, Iran

- Cumulative GPA: **18.9/20**

Research Interests

- Robotics and Applications
- Deep Learning
- Machine Learning
- Computer Vision

Honors & Awards

- Faculty of Engineering **excellent student for last two consecutive years**, as a result of obtaining **Grade A** GPA.
- **Full Scholarship** from the University of Tehran (Tuition Fee)
- Ranked **223th** in Iranian Universities Entrance Exam in the field of Mathematics and Physics (with more than 148K participants competing to enter a high reputed university), June 2017
- Ranked **1st** in a county Research Competition, Bushehr province, 2010

Research Experience and Notable Projects

B.Sc Thesis | [RAIIS](#) research institute, University of Tehran

May 2021 – Present

- I'm working with [Prof.Majid Nili Ahmadabad](#) at [RAIIS](#)¹ research institute on a paper about **Persien-Sign-Language Transformer using Deep Neural Networks, Computer Vision, and NLP methods**, which will be submitted soon.

Research Assistant | [RAIIS](#) research institute, University of Tehran

May 2021 – Present

- I'm working on **Soft Robotics** under supervision of [Prof.Majid Nili Ahmadabad](#) at [RAIIS](#) our porpuse is to design and control a **Soft-Gripper-Robot** that uses soft silicone based materials and deforms through pressure difference.

Internship | [RAIIS](#) research institute, University of Tehran

June 2021 – Present

- Responsible for **Design and Control of a Microfluidic-Robot for specific Drug-Delivery tasks**.
- Got familier with different type of actuators and ways to control them.
- Got familier with different type of Modern Control systems using STM32 Microcontrollers.

Internship | [Azarakhsh Company](#)

April 2019 – June 2019

- **Designed an industrial controlling system using PLC programming.**
- Got Familiar with different concept of Smart Controls.

¹Robotics, Artificial Intelligence and Information Sciences laboratory of University of Tehran.

- **Neural Networks and Deep Learning** | by *Prof.Kalhor*

Implementation of different variants of **GANs** (CycleGAN, Interface-GAN, Style-GAN, Stack-GAN) for specific tasks related to the GAN's functionality. Implementation of **U-Net** for a segmentation task using CamVid dataset. Implementation of a complex neural network containing **CNN** layers and **LSTM** layers to predict next 10 frames of specific videos. Trained a **YOLOv5** model to detect color of each ball on the "Bocce Bal Game" table and report status of the game.[\[Github\]](#)

- **Artificail Intelligence:** | by *Prof.Yaghoobzadeh* and *Prof.Fadaei*

Implementation of **Genetic**, **Decision Tree**, **Random Forest**, **KNN**, and **Regression** Machine Learning algorithms in python for specific tasks like "Estimating the price of smart-phones", "Classifying and predicting each person's race based on their face", "Classifying type of each book based on its name and its introduction".[\[Github\]](#)

- **Fundamentals of Mechatronics** | by *Prof.Tale Masoule*

Implementation of **youBot** (a mobile robotic arm developed by KUKA) and presented it in the Gazebo simulation with ROS.[\[Github\]](#)

- **Instrumentation** | by *Prof.Nayeri*

Programmed STM32F401RE to perform specific tasks like **generating specific wave** with desired frequency, designed **light detection** and **distance detection** using required sensors like CNY70 and Altera-Sonic [\[Github\]](#)

- **Advanced Programming** | by *Prof.Khosravi*

Developed an **Online-Market** (Front and Back) and **Tank Trouble** Game and some other minor projects with C++.[\[Github\]](#)

Technical Skills

- **Programming:**

- Python(Advanced), C/C++(Advanced), ARM(Advanced), Verilog(Advanced), L^AT_EX(Advanced), HTML(Familiar), CSS(Familiar), Java(Familiar)

- **Software:**

- MATLAB(Advanced with IEEE SB Certificate), STM32CubeMX(Advanced), COMSOL(Advanced), Arduino(Advanced), Microsoft Office(Advanced), PSPICE(Familiar), NI Multisim(Familiar), AutoCad(Familiar)

- **Frameworks, Libraries and Operational Systems**

- Profecient in Tensorflow, Pytorch, NumPy, OpenCV(python & C++), scikit-learn, Microsoft Windows, Linux

Teaching Experiences

Neural Networks and Deep Learning (Graduate Course) | by *Prof.Kalhor*

Fall 2021

- Providing one project about CNN, LSTM Neural Networks and their applications, and several questions for home-works and then grading them.

Robotics and Applications (Graduate Course) | by *Prof.Tale Masoule*

Fall 2021

- Providing projects (using MATLAB, ROS, and Gazebo), home-works, and then grading them beside holding Online TA sessions to solve questions for the students.

Fundamentals of Mechatronics | by *Prof.Tale Masoule*

Fall 2021

- Providing home-works, and projects (using MATLAB, ROS, and Gazebo) and then grading them.

Engineering Mathematics | by *Prof.Tale Masoule* and *Prof.Aghdam*

Fall and Spring 2020, Fall 2021

- Fall 2021: Providing all the Projects with MATLAB and then grading them.

- Spring 2020: Provided home-works, quizzes, one project with MATLAB and graded them.
- Fall 2020: Provided home-works, quizzes, and then graded them.

Instrumentation | by [Prof.Nayeri](#)

Spring 2021

- Provided home-works, one project using MATLAB, STM32CubeMX, and Proteus.

Electromagnetics | by [Prof.Yousefi](#)

Fall 2019, Fall 2020, Fall 2021

- Fall 2021: **Chief TA** of the course, responsible for management of all TAs and providing all the projects with COMSOL and then grading them.
- Fall 2020: **Supervisor** of 8 TAs, provided teaching materials and designed projects with COMSOL and graded all projects
- Fall 2019: Held TA sessions, provided home-works and then graded them.

Introduction to Computing Systems and Programming | by [Prof.Moradi](#) and [Prof.Hashemi](#)

2020

- Fall 2020: **Supervisor of 18 TAs** provided assignments based on C language, held TA sessions, and graded exams as Lab Supervisor.
- Spring 2020: **Supervisor of 10 TAs** provided assignments based on C language, held TA sessions, and graded exams as Lab Supervisor

Fundamentals of Physics II | by [Prof.Shaterzade](#)

Spring 2020

- Provided quizzes and graded them, helped to design a project using MATLAB and COMSOL and graded them.

Fundamentals of Electrical Engineering | by [Prof.Shahabadi](#)

Fall 2019

- Held weekly Lab sessions, provided two presentations about wiring components and transistors fundamentals, held TA sessions and graded students based on their weekly performance at Lab.

Related Courses (Graduate courses are indicated by *)

Theoretical Courses

- | | |
|--|--|
| • Neural Networks and Deep Learning* : 18.04/20 | • Fundamentals of Mechatronics : 19.25/20 |
| • Artificial Intelligence : 20/20 | • Industrial Control : 17.48/20 |
| • Operation Research : 18/20 | • Linear Control Systems: 17.6/20 |
| • Instrumentation: 17.9/20 | • Advanced Programming : 17/20 |

Experimental Courses

- | | |
|---|--|
| • Digital Control Systems Laboratory : 19.4/20 | • Electrical Machines Laboratory I : 19.5/20 |
| • Logic Circuits Laboratory : 20/20 | • Linear Control Systems Laboratory : 18.3/20 |

Conferences

- Approved to give a conference about **MRI and Electromagnetics Waves applications** for the entire department. *University of Tehran, Department of Electrical and Computer Engineering, January 2020* (Cancelled due to the Corona-Virus-Crisis).

Languages

- **English:** Fluent (TOEFL will be taken on 6th of November)
- **Farsi:** Native

References

- [Prof.Majid Nili Ahmadabadi](#)[Professor]
 - ✉ mnili@ut.ac.ir
- [Dr.Leila Yousefi](#)[Associate Professor]
 - ✉ lyousefi@ut.ac.ir
- [Dr.Mehdi Tale Masouleh](#)[Associate Professor]
 - ✉ m.t.masouleh@ut.ac.ir