Mohammadali Shakerdargah

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EDUCATION

- Bachelor of Science in Electrical Engineering, (Control) 2017 – 2022
  University of Tehran, Tehran, Iran
  GPA: **18.23/20 or 4/4 (Last year with 29 units passed)**
  17.56/20 or 3.77/4 (Last two years)
  16.8/20 or 3.49/4 (Till now)
- Minor: Computer Engineering, 2019 - 2022
  University of Tehran, Tehran, Iran
  GPA: **17.8/20 or 4/4 (till now)**
- Nemooneh Imam Khomeini high school, 2013-2017
  Bushehr, Iran
  Grade: **18.9/20**

AREAS OF INTEREST

- Robotics, Machine Learning, Deep Learning, Machine Vision

TECHNICAL SKILLS

- **Software:**
  MATLAB, STM32CubeMX, COMSOL, PSPICE, NI Multisim, AutoCad, Microsoft Office, Arduino
- **Programming Languages:**
  Python (Advanced), C/C++ (Advanced), Verilog (Advanced), ARM (Advanced)
  LATEX (Advanced), HTML (Familiar), CSS (Familiar), Java (Familiar)
- **Operating Systems:**
  Microsoft Windows, Linux
- **Measurement Equipment:**
  Signal Generator, Arbitrary Wave Generator, Oscilloscope

ACTIVITIES

RESEARCH EXPERIENCE

- **Research Institute for Robotics, Artificial Intelligence, and Information Sciences,** under supervision of Prof.Nili ▪ May 2021 till present
  - Working as a research assistant on object detection and pattern recognition using neural networks and deep-learning.
  - Working as a research assistant on microfluidic robots and system control.
- **Azarakhsh Company** ▪ Spring 2018
  Worked as a designer & project contributor, using PLC

TEACHING EXPERIENCE

- **Introduction to Computing Systems and Programming** By Prof.Hashemi

and Prof.Moradi ▪ Fall 2020
Supervisor of 10 TAs, provided assignments based on C language, held TA sessions, and graded exams as Lab Supervisor.

- **Electromagnetics,** By Prof.Yousefi ▪ Fall 2020
  Supervisor of 8 TAs, provided teaching materials and designed projects with COMSOL and graded all projects as Main Supervisor.
- **Engineering Mathematics,** By Prof.Aghdam ▪ Fall 2020
  Provided home-works, quizzes, and one project of different solutions to Laplace equations using MATLAB, graded all the provided assignments.
- **Instrumentation,** By Prof.Nayeri ▪ Fall 2020
  Provided home-works, one project using MATLAB, STM32CubeMX, and Proteus.
- **Introduction to Computing Systems and Programming** By Prof.Moradi ▪ Spring 2020
  Supervisor of 28 TAs, provided assignments based on C language, held TA sessions, and graded exams as Lab Supervisor.
- **Fundamentals of Physics II,** By Prof.Shaterzadeh ▪ Spring 2020
  Provided quizzes and graded them, helped to design a project using MATLAB and COMSOL and graded them.
- **Engineering Mathematics, HW Organizer** ▪ Fall 2019
  Provided home-works, quizzes, and graded all the provided assignments.
- **Electromagnetics,** By Prof.Yousefi ▪ Fall 2019
  Provided presentations about usage of Electromagnetics in our daily lives.
- **Fundamentals of Electrical Engineering,** By Prof.Shahabadi and Prof.Samimi ▪ Fall 2019
  Held weekly Lab sessions, provided two presentations about wiring components and transistors fundamentals, graded students weekly performance at Lab.

NOTABLE PROJECTS

- Implementation of different variants of generative adversarial networks (Cycle-GAN, Interface-GAN, Style-GAN, Stack-GAN) for specific tasks.
- Implementation of a complex neural network containing Convolutional layers and LSTM layers for classification of specific videos, June 2021
- Implementation of U-Net for a segmentation task using CamVid dataset, May 2021
- Implementation of a multi-layer CNN for an image classification task using Cifar-10 dataset, April 2021
- Implementation of genetic algorithms and other Machine Learning algorithms in python during Artificial Intelligence course like Decision trees, KNN, Regression, Clustering and …, Spring 2021
- Gathered Ukraine's Power-Grids information and solved its Transportation problem using Python during Operation Research course, Fall 2020
- Designed a controller for ball and beam system, January 2020
- 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.
- Preprocess and implementation of Machine Learning algorithms on images using MATLAB, 2019
- Designed a platform for Audio-Recognition using MATLAB, March 2019

- Developed an online market (Front and Back) and a Game (Tank Trouble) and some other minor projects with C++, Fall 2019
- Designed and Simulated a power grid system in Power World application, December 2019
- Designed a web platform dedicated to control light, moister, and temperature in a room using Arduino-Uno, Spring 2019

RELEVANT COURSES

- Artificial Intelligence: 20/20 (4/4)
- Neural Networks and Deep Learning (Graduate Course): 18.04/20 (4/4)
- Operation Research: 18/20 (4/4)
- Instrumentation: 17.9/20 (4/4)
- Fundamentals of Mechatronics: 19.25/20 (4/4)
- Industrial Control: 17.48/20 (4/4)
- Linear Control Systems: 17.6 /20 (4/4)
- Advanced Programming: 17/20 (4/4)
- Data Structures: 16.4/20 (4/4)

HONORS AND AWARDS

- Faculty of Engineering excellent student for **last 3 consecutive semesters** as a result of obtaining a GPA of over 17/20.
- Full Scholarship from the University of Tehran (Tuition Fee)
- Ranked **223rd** 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

CONFERENCES

- MRI and Electromagnetics Waves, Department of Electrical and Computer Engineering, January 2020, (Cancelled due to the Corona-Virus-Crisis)

LICENCES & CERTIFICATIONS

- Signal Processing, Grade: A
  IEEE University of Tehran Student Branch, Aug 2019

LANGUAGES

- English: Professional Working Proficiency
  - TOEFL IBT: To be taken (October 13, 2021)
- Persian (Farsi): Native Proficiency

REFERENCES

- Available upon request.