

Farhad Vaseghi

AI AND ROBOTICS MASTER STUDENT OF ISFAHAN UNIVERSITY OF TECHNOLOGY

Isfahan-Iran

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“Be the change that you want to see in the world.”

Education

IUT(Isfahan University of Technology)

MSC IN ARTIFICIAL INTELLIGENCE AND ROBOTICS

- (GPA: 17.58/20 or 4/4) Top 4 students of the class

Isfahan, Iran

Sept. 2021 - Present

IUT(Isfahan University of Technology)

BSC IN ELECTRICAL ENGINEERING

- (GPA: 16.95/20 or 3.54/4) Top 10% of the class

Isfahan, Iran

Sept. 2017 - July 2021

Honors & Awards

2021 **Elite student**, Entering master's degree directly without domestic qualification exam.

Isfahan, Iran

2017 **Elite student**, Received national undergraduate full scholarship.

Isfahan, Iran

2017 **Konkour(Iranian University Entrance Exam)**, Ranked 820 among more than 500,000 participants for the university entrance.

Isfahan, Iran

Professional Work Experiences

AI AND ROBOTICS Lab(Dr.Samaneh Hosseini Semnani)

RESEARCHER

- The project was about implementing and simulating ORCA(Optimal Reciprocal Collision Avoidance) algorithm for Drone Light Show.
- Implemented simulations phase on Gazebo.

Isfahan, Iran

Nov. 2021 - Aug. 2022

RASA MOJE Company

RESEARCHER

- Introducing and implementing algorithms for automotive radars.
- Implemented a framework for signal processing algorithms related to the cruise control systems of cars for automotive radars (AWR1243, TSW1400EVM, and DCA1000EVM from Texas Instruments company).

Isfahan, Iran

July 2020 - Mar. 2021

Teaching Experiences

Lab Instructor

ISFAHAN UNIVERSITY OF TECHNOLOGY

- Digital Signal Processing Lab.
- C Programming Lab.

Isfahan, Iran

Teaching Assistant

ISFAHAN UNIVERSITY OF TECHNOLOGY

- Deep Learning(master course)
- FPGA Programming with Verilog.
- Digital System Design 1.

Isfahan, Iran

Mentor

ISFAHAN UNIVERSITY OF TECHNOLOGY

- Digital System Design with Arduino.

Isfahan, Iran

Selected Courses

Undergraduate

ISFAHAN UNIVERSITY OF TECHNOLOGY

- Fundamentals of Computer Vision (Grade: 18.9/20)
- FPGA (Grade: 18.2/20)
- Fundamentals of Biomedical Engineering (Grade: 18.9/20)

Isfahan, Iran

ISFAHAN UNIVERSITY OF TECHNOLOGY

- Deep Learning (Grade: 17.54/20)
- Autonomous Mobile Robots (Grade: 17.16/20)
- Digital Image Processing (Grade: 19.8/20)
- Reinforcement Learning (Grade: 16.03/20)

Skills

Programming	Matlab, Python, C/C++, Verilog, Assembly, \LaTeX , Version Control GIT
AI and Robotics Tools	OpenCV, ROS, Gazebo
Deep Learning Frameworks	TensorFlow, Keras, PyTorch
PCB Design Software	Altium Designer
Micro Controllers/FPGA	AVR, Arduino, FPGA(Xilinx)
Operating Systems	Windows, Linux
Languages	Farsi (native), English (fluent)

Academic Projects

Toxic comment classification on the dataset provided by Jigsaw/conversation AI.

ISFAHAN, IRAN, 2021

- Implementing a model that could classify all destructive comments on online forums or social media.

Sound power estimation with an acoustic camera (UMA-16 USB from MiniDsp Company).

BACHELOR DEGREE PROJECT

- Different algorithms have been implemented on acoustic cameras in order to determine sound power estimation performance and sound source separation ability.

Creating an interface for automotive radars (ARS 408 from Continental Company).

ISFAHAN, IRAN, 2020

- Analysis, and validation of an mm-wave FMCW radar operation in a vehicle for detecting the presence of an occupant.

Drone swarm simulation

ISFAHAN, IRAN, 2022

- Simulating a group of drones reaching from their origins to their destinations using the Gazebo simulator.

Aerial imagery segmentation on Dubai's satellite imagery dataset.

ISFAHAN, IRAN, 2022

- Implementing U-Net model on TensorFlow for aerial imagery segmentation on unbalanced binary masks.

AI-driven snake game using deep Q learning with PyTorch.

ISFAHAN, IRAN, 2022

- This project was based on reinforcement learning which trained the snake to eat the food presented in the environment

Hybrid algorithm for disparity calculation based on semantic stereo matching.

ISFAHAN, IRAN, 2021

Capuchin bird audio classification with TensorFlow.

ISFAHAN, IRAN, 2020

- Implementing a machine learning model to count the number of Capuchin bird calls within a given clip.

Creating a signal generator with Verilog language on Xilinx Spartan-6 LX9.

ISFAHAN, IRAN, 2018

- Programming a signal generator with Verilog which is able to generate different waves on an FPGA using Vivado.

Flappy bird game using Pygame module.

ISFAHAN, IRAN, 2018

- Using Pygame, an open-source python library, for designing a fully functional game.

References

Dr.Samaneh Hosseini Semnani

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