

# Milad Soltany Kadarvish

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## EDUCATION

### Iran University of Science and Technology

BSc in Electrical Engineering - Control Engineering

Tehran, Iran

Sep 2016–Feb 2022 (Expected)

- Total GPA: 3.67/4, (16.97/20)
- GPA via the last 60 credits: 3.89/4, (18.16/20)
- Thesis: Design, Simulation, And Construction of An Autonomous Vehicle with Environment Perception, Planning, and Control Capabilities (Mark: 20/20)

## PUBLICATIONS

1. **M. Soltany Kadarvish**, H. Mojtahedi, H. Entezari Zarch, A. Kazerouni, A. Morsali, A. Abtahi and F. Marvasti. “Ensemble Neural Representation Networks”. Manuscript submitted for publication. [arXiv](#)

## RESEARCH INTERESTS

- Artificial Intelligence
- Computer Vision
- Deep Learning
- Autonomous Driving
- GANs
- Machine Learning

## RESEARCH EXPERIENCE

- *Machine learning and Computer Vision Researcher at DGSculptor, Montreal, Canada* Feb 2021 - Present

At DGSculptur, I worked on the task of Implicit Neural Representation, where a signal is represented by an MLP. This resulted in the paper “Ensemble Neural Representation Networks.” Currently, I’m working on utilizing this concept for Super-Resolution.

- *Researcher Assistant at AI and Control Lab, IUST, Tehran, Iran* Sep 2019 - Oct 2021

Under the supervision of Dr. Saeed Shamaghdari, I worked on multiple computer visions tasks. Our research was mainly focused on 3D and stereo vision.

## TEACHING EXPERIENCE

- *Teaching Assistant at Iran University of Science and Technology* Jan 2021 - June 2021

- Mechatronics Course

- *Co-Founder, Instructor and Mentor at AIR Center* July 2020 - Present

- Taught Courses:

- Python Bootcamp
- Introduction to Deep Learning

- Mentored Courses:

- Python Bootcamp
- Introduction to Deep Learning
- Data Science and Machine Learning

## ACADEMIC PROJECTS

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- **Persian OCR**

March 2021 - Present

Since there is no working Persian OCR tool, we decided to create one. We consider this project as a side project. It includes three different tools: 1. Data Generation, 2. Data Labeling, 3. TextMe. I was tasked with creating the Data Generation software. It is responsible for creating realistic images that can be further used for training machine learning algorithms for detection. The machine learning part is currently being developed.

- **Design, Simulation, And Construction of An Autonomous Vehicle with Environment Perception, Planning, and Control Capabilities**

Defence date: Sep 2021

In this project, we built a toy car with environment perception and motion planning capabilities. Various deep learning and classic methods were used to achieve this task. Furthermore, the car was able to detect signs and act accordingly. Also, it performed automatic parking as well as finishing urban and race tracks. This thesis was supervised by Dr. Shamaghdari and a full mark was acquired.

- **Unauthorized Load Detection Using Stereo Cameras**

Sep 2019 - Oct 2021

Our objective was to detect vehicles of various sorts and using point-clouds to detect whether they were overloaded or not. This project was also supervised by Dr. Shamaghdari.

- **Fully Autonomous Vehicle (Based on AVIS engine)**

Jan 2021 - July 2021

The objective was to program a vehicle to navigate through 4 different tracks. These tracks included Urban and Race environments and each one had its own set of rules and difficulty levels. Various computer vision algorithms were utilized as well as Control theory.

- **Online Ad-Recommender System**

Dec 2019 - Mar 2020

This project was held by the Sharif University of Technology and sponsored by Tapsell, a renowned online ads company in Iran. A cold-start problem was also fixed. On top of that, our team managed to get the 1st rank among more than 140 teams.

## COMPUTER SKILLS

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- Programming Languages

- \* Python

- \* Matlab

- \* C/C++

- Machine Learning Tools/Libraries

- \* Pytorch

- \* Tensorflow

- \* NMP

- \* OpenCV

- \* Scikit-Learn

- Other Tools

- \* Git

- \* Latex

- \* CodeVision AVR

## AWARDS AND HONORS

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- Ranked 2nd Team in FIRA Competitions in Autonomous Cars League (Race Section)

Jan 2021 - July 2021

- Ranked 3rd Team in FIRA Competitions in Autonomous Cars League (Urban Section)

Jan 2021 - July 2021

- Ranked 1st Team in the National Rahneshtan Competitions for Autonomous Vehicles

Sep 2020 - Jan 2021

- Ranked 2nd Team Among More than 140 Teams in National Data-Days Competitions

Dec 2019 - Mar 2020

- Ranked 68th (99th percentile) in National University Entrance Exam for Mathematics and Physics Summer

2017

- Ranked 28th (99th percentile) in National University Entrance Exam for Foreign Languages

2017

- Top Student for 6 Consecutive Semesters at the ILI (Iran Languages Institute)

2014-2015

## ONLINE COURSES

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- GANs Specialization, Coursera
- Python Zero to Hero Bootcamp, Udemy
- Neural Networks and Deep Learning, Coursera
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, Coursera
- Convolutional Neural Networks, Coursera
- Structuring Machine Learning Projects, Coursera
- Sequence Models, Coursera
- Introduction to Self-Driving Cars, Coursera
- Tensorflow in Practice Specialization, Coursera

## LANGUAGES

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- *English*: C2 Proficiency
  - L(8.5), R(8.5), S(8), W(7.5). **Overall (8)**
- *Kurdish*: Native
- *Persian*: Native

Exam Date: 20 Sep, 2021

## REFERENCES

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- **Dr. Farokh Marvasti**  
**Professor at the Sharif Univeristy of Technology**  
Director of Advanced Communications Research Institute  
Email: marvasti@sharif.edu
- **Dr. Saeed Shamaghdari**  
**Assistant Professor at Iran University of Science and Technology**  
Director of AI and Control Lab, Iran University of Science and Technology  
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- **Dr. Alireza Morsali**  
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