

# Alireza Keshavarzian

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## Education

### Amirkabir University of Technology

*M.Sc. in Electrical Engineering*

GPA: 3.9

Tehran

sep 2016 – up to now

### Amirkabir University of Technology

*B.Sc. in Electrical Engineering*

GPA: 3.95

Tehran

sep 2012 – aug 2016

### Amirkabir University of Technology

*B.Sc. in Computer and Information Technology Engineering (Double Major)*

GPA: 3.82

Tehran

oct 2014 – jan 2019

## Work Experience

### Atrovan

*CTO*

Tehran

Nov 2016 – Up to now

- Team leader of Smart home Gateway based on Zigbee protocol
- Team leader, backend developer and architecture of Atrovan IoT cloud platform
- Developer of Atrovan edge layer. working on Modbus and MQTT Gateway which is deployed on fog layer of smart solutions
- Team leader, backend developer in software department of smart energy metering device called Ecosense
- Project manager of Atrovan IoT IR controller device
- Coaching and mentoring groups of trainees in software department

### Ahanforoosh

*Project manager*

Tehran

Sep 2018 - Jan 2019

- Team leader of two-sided platform aiming iron-sellers and buyers

### HPRC

*cloud manager*

Tehran

mar 2017 – jul 2017

- deploying Openstack on cluster

## Academic Experience

### Reaserch Assistant

*Speach Processing Reaserch Lab*

Amirkabir University of Technology

Nov 2016 – Up to now

- under the supervision of Dr. S. Seyyedini

### Reaserch Assistant

*Pervasive Computing Reaserch Lab*

Amirkabir University of Technology

Nov 2016 – Up to now

- under the supervision of Dr. S. Sharifian

### Reaserch Assistant

*Digital Smart System Reaserch Lab*

Amirkabir University of Technology

Nov 2016 – Up to now

- under the supervision of Dr. A. Motamedi

### Reaserch Assistant

*High Speed Processing Researcch Lab*

Amirkabir University of Technology

Mar 2014 - Sep 2016

- under the supervision of Dr. S. Sharifian and Dr. A. Motamedi

## Lab Instructor

### tutor of **FPGA lab**

Amirkabir University of Technology

2016 – Up to now

- Teaching VHDL and verilog based on Spartan3 evaluation board
- Designing 10 different FPGA experiments, taking exams and graded about 70 undergraduate students.
- Wrote instructions to teach the students how to work with ISE, Vivado and VHDL tutorial

## Cloud winter workshop festival of AUT

Amirkabir University of Technology

### tutor of Spark

dec 2017

- Giving a speech on spark framework and cluster computing.
- installing and testing a Caffe on Spark framework for audiences.

## Teacher assistant

Tehran

### Head Teacher assistant of **Machine Learning**

sep 2017 – feb 2018

- Conceiving, writing and grading problem sets for two classes with 28 undergraduate students in each.
- Teaching Tensorflow, Keras and Scikit-learn frameworks

## Teacher Assistant

Amirkabir University of Technology

### Head teacher assistant of **C++ programming**

sep 2017 – feb 2018

- Conceiving, writing and grading problem sets for two classes, each consisting 100 undergraduate students in each.

## Awards and Honors

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2014	<b>Accepted to double-major program</b> , Accepted to double-major program (Electrical Engineering and Computer Engineering) under the “Exceptional Talents” category	Amirkabir University of Technology
2016	<b>Ranked 6th</b> , in Department of the Electrical Engineering among about 150 undergraduate students, Amirkabir University of Technology	Amirkabir University of Technology
2016	<b>Direct Admission to M.Sc. program in Electrical Engineering</b> , under the “Exceptional Talents” category	Amirkabir University of Technology
2016	<b>Direct Admission to M.Sc. program in Computer Engineering</b> , in Artificial Intelligence branch, under the “Exceptional Talents” category	Amirkabir University of Technology
2016	<b>Got Admission to Ph.D program in Electrical Engineering</b> , full funded as an international student	University of California, Davis
2014	<b>Ranked 3th in Robotic &amp; Artificial Intelligence Festival (AAIC) of Amirkabir</b> , Impainting the advertisement logos in videos	Amirkabir University of Technology

## Projects

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### Human activity recognition using modified residual network based on Apache Spark framework

Keras, python, Hadoop, Spark

**M.Sc. Thesis.** Implementing a novel architecture along with a new smoothing layer to leverage the classification of human activity. Moreover, the proposed architecture is deployed on Spark framework to be capable of learning feature from large volume of data

### Designing and developing an IoT Platform to aggregate and analyze IoT data

Golang, react, openwhisk, CassandraDB, PostgresDB, VerneMQ

An enterprise project that aims to aggregate and analyze IoT data, visualize the data on a dashboard and analyze the them. this project is devised and implemented in micro service architecture along with “function as a service” style for Rule engine, the part analysis the incoming data.

## SVD-based digital image watermarking

python

*a singular value decomposition (SVD)-based watermarking scheme used to watermark logos within a picture*

## Implementing Feature Learning and Inpainting of damaged pictures

Keras, python

*Semi-Supervised Learning with context-conditional generative adversarial networks*

## Low-Rank Incremental methods for computing dominant singular subspaces

python, spark

*developing a family of methods for incrementally computing the dominant SVD of a large matrix*

## Implementing an energy-efficient routing algorithm for wireless sensor networks using a heuristic method

python

*Finding the optimum route between two wireless antenna based on the distance, hops and battery levels of stations placed between source and destination antenna*

## Implementing of Monte Carlo algorithm on GPUs via CUDA framework

C++, CUDA

*developing Monte Carlo algorithm for financial purpose in stock predictions via CUDA framework*

## Implementation of Static Logo detection and inpainting it on sports footage using CUDA on GPU

C++, CUDA, openCV

**B.Sc. thesis.** *Devising wide range of methods to detect and inpaint static advertisement logos on spots footage*

## Healthcare Application to monitor and controll the status of elder people using cross platform framework

C++, Embarcadero

*Measuring user's activities via accelerometers and gyroscope of smartphones. Detecting harsh activities by applying wavelet filter and sending alarm to the server under special circumstances*

## Design and Simulation of MIPS Processor

verilog

## Design and Simulation of sobel filter and edge detection

VHDL

## Skills

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**Programming skills:** Golang, Python, C++, Java, Javascript

**Frameworks:** Tensorflow, Keras, Spark, CUDA, openCV

**HDL languages:** Verilog, VHDL

**web skills:** HTML, CSS, JS, Bootstrap, React js, MongoDB, CassandraDB

**OS:** Ubuntu, CentOS, MacOS, windows