Alireza **Keshavarzian**

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Education

Amirkabir University of Technology
Tehran

M.Sc. in Electrical Engineering
sep 2016 – up to now

GPA: **3.9**

Amirkabir University of Technology
Tehran

B.Sc. in Electrical Engineering
sep 2012 – aug 2016

GPA: **3.95**

Amirkabir University of Technology
Tehran

B.Sc. in Computer and Information Technology Engineering (Double Major)
oct 2014 – jan 2019

GPA: **3.82**

Work Experience

Atrovan
Tehran

CTO
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
Tehran

Project manager
Sep 2018 - Jan 2019

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

HPRC
Tehran

cloud manager
mar 2017 – jul 2017

- deploying Openstack on cluster

Academic Experience

Reaserch Assistant
Amirkabir University of Technology

Speach Processing Reaserch Lab
Nov 2016 – Up to now

- under the supervision of Dr. S. Seyyedin

Reaserch Assistant
Amirkabir University of Technology

Pervasive Computing Reaserch Lab
Nov 2016 – Up to now

- under the supervision of Dr. S. Sharifian

Reaserch Assistant
Amirkabir University of Technology

Digital Smart System Reaserch Lab
Nov 2016 – Up to now

- under the supervision of Dr. A. Motamedi

Reaserch Assistant
Amirkabir University of Technology

High Speed Processing Researcch Lab
Mar 2014 - Sep 2016

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

Lab Instructor
Amirkabir University of Technology

*tutor of **FPGA lab***

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

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

Projects

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 impainting it on sports footage using CUDA on GPU *C++, CUDA, openCV*
B.Sc. thesis. *Devising wide range of methods to detect and impaint 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 sober filter and edge detection *VHDL*

Skills

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