

# Ghazal Sadeghian

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## Education

### Master of Applied Science in Electrical and Computer Engineering

UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER, CANADA

Sept 2021 - Present

### Bachelor of Computer Engineering

GPA: 18.65/20 (3.87/4)

AMIRKABIR UNIVERSITY OF TECHNOLOGY, TEHRAN, IRAN

Sept 2016 - June 2021

- Related Courses: Cloud Computing(20/20), Computer Networks(19.4/20), Information Security(19.1/20), Operating Systems(19.9/20), Engineering Statistics(20/20), Linear Algebra(20/20), Multimedia Systems(19/20), IoT(PASS-Due to COVID19), AI(PASS-Due to COVID19), DB Design(PASS-Due to COVID19)

### Diploma of Math and Physics

GPA: 19.93/20 (4/4)

SALAM HIGH SCHOOL, TEHRAN, IRAN

Sept 2012 - July 2016

## Research Interests

Computer Networks and Security

Cloud Computing

Applied Machine Learning (ML4SYS)

Internet of Things

## Honors and Awards

### Awarded as University's Exceptionally Talented Student

AS A RESULT OF OBTAINING A TOTAL GPA OF OVER 17/20

2017, 2018, 2019, 2020

### Ranked 6th among 130 Computer Engineering students

### Ranked in the Top 0.47% (99.53 percentile)

AMONG MORE THAN 168,000 PARTICIPANTS IN IRANIAN NATIONWIDE UNIVERSITY ENTRANCE EXAM

2016

### Iranian Mathematical Olympiad

ACCEPTED IN FIRST ROUND AS TOP 25 PERCENT OF TALENTED IRANIAN STUDENTS

2012, 2014

### RoboCup Iran Open

NINTH PLACE AMONG MORE THAN 100 TEAMS IN JUNIOR RESCUE LEAGUE - AWARDED AS THE SUPER TEAM OF RESCUE ROBOTS AMONG MORE

THAN 30 TEAMS

2015

## Research Experiences

### Undergraduate Research Assistant at Amirkabir University of Technology

Amirkabir University

PROF. MARYAM AMIRMAZLAGHANI'S LAB

2020-2021

- Prediction of Individuals' Health Insurance Cost using Multivariable Regression

### Research Intern in Institute for Research in Fundamental Sciences (IPM)

IPM

PROF. AHMAD KHONSARI'S LAB

2020

- IoT traffic analysis, and applying LSTM approach for detecting malicious packets

## Teaching Experiences

### "Linear Algebra and its Applications" Teaching Assistant

Amirkabir University

PROFESSOR MARYAM AMIRMAZLAGHANI

2019

### "Operating System" Teaching Assistant

Amirkabir University

PROFESSOR NASTOOH TAHERI JAVAN

2020

### "Algorithm Design" Teaching Assistant

Amirkabir University

PROFESSOR ALIREZA BAGHERI

2020

## Workshops

### Matlab Workshop

Amirkabir University

TOOLS FOR SOUND PROCESSING AND IMAGE PROCESSING

2016, 2017

### IEEE Data Science Winter School

University of Tehran

ADVANCED TOPICS IN MACHINE LEARNING, DEEP LEARNING, AND STATISTICAL INFERENCE

2019

### Amirkabir Artificial Intelligence Summer Summit

Amirkabir University

ADVANCED TOPICS IN MACHINE LEARNING, DEEP LEARNING, AND NEUROSCIENCE

2019

# Projects

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## Secure TCP Tunnel Between Client and Server

INFORMATION SECURITY PROJECT

- Implementation of a tunnel for having secure connection between client and server in two phases: 1) using symmetric encryption and physical key 2) using asymmetric encryption, and Diffie-Hellman algorithm for exchanging keys (Implemented in java)

## Elastic Load Balancing via Haproxy

CLOUD COMPUTING PROJECT

- Implementing an auto scaling load balancer for balancing the load between three VMS.

## Implementation of a Dashboard for Remote Management of VMs

CLOUD COMPUTING PROJECT

- Implementing a dashboard for remote management of virtual machines in VirtualBox with many abilities such as starting and stopping a VM, cloning a new VM, and executing commands on a remote VM

## Implementation of MapReduce Programs

CLOUD COMPUTING PROJECT

- Setting Up a multi node Hadoop cluster on virtual machines and implementation of two MapReduce programs: 1) Word Count, 2) Matrix Multiplication

## Chatroom (Socket Programming)

COMPUTER NETWORKS PROJECT

- The server broadcasts a UDP message for selecting the client, and then they will start to chat, using TCP socket programming (Implemented in Python)

## Communication between Nodes by Using MQTT and CoAP Protocols

INTERNET OF THINGS PROJECT

- Exchanging data between two nodes and a server with MQTT and CoAP protocols. Implemented by using coaphthon library for CoAP, and paho.mqtt for MQTT. Also, Mosquitto broker is used as MQTT server

## LoRaWan Network Simulation

INTERNET OF THINGS PROJECT

- Analyzing effects of multiple parameters on LoRaWan network by using floRa and Inet framework

## Building a NodeMCU ESP8266 Webserver and Controlling an LED from a Webpage

INTERNET OF THINGS PROJECT

- Controlling the on board LED of a NodeMCU module from a webpage

## Foofle: an Email Management Application

DATABASE DESIGN PROJECT

- The database of an email management system which is implemented by several triggers, functions, views and indexes (Implemented in MySQL)
- A graphical user interface (Implemented in python)

## Implementation of Multiple Search Algorithms for Sliding N-Puzzle Problem

ARTIFICIAL INTELLIGENCE PROJECT

- Implementation of BFS, bidirectional BFS, IDS and A\* algorithms for sliding n-puzzle problem (Implemented in python)

## Filling Missing Words by Using N-grams (NLP)

ARTIFICIAL INTELLIGENCE PROJECT

- Implementation of a Text Filler by using N-grams for "Billion Word Imputation" dataset. Backoff model used for the trigram model (Implemented in python)

## Development of an Online Realtor Website Named "Kilid"

INTERNET ENGINEERING PROJECT

- Implementation of its front-end with HTML and CSS, and adding dynamic features by using Javascript, and implementation of its back-end by using Django framework

## Facial Recognition with SVD

LINEAR ALGEBRA PROJECT

- Three phases : 1) detection using eigenfaces, 2) image compression with SVD and DCT, 3) face recognition by SVD (Implemented in Matlab)

## Modification in XV6 OS

OPERATING SYSTEM PROJECT

- Implementation of several scheduling policies and ticket lock for xv6 operating system, and adding new system calls to xv6 (Implemented in C)

## Skills

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Programming Languages	Python, Java, C, SQL, Assembly, Matlab, Bash Scripting (Sorted By Proficiency)
Web Development	HTML, CSS, Javascript, PHP, Django
Hardware Design Languages	Arduino, Verilog, VHDL
Simulation	Atmel studio, Proteus, OMNet++, ModelSim, AVR studio
Tools	Git, Wireshark, $\LaTeX$
Operating Systems	MacOS, Linux(Ubuntu), Windows

## Languages

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English(Fluent) TOEFL iBT Score: 107 [Reading: 30, Listening: 27, Speaking: 23, Writing: 27]  
Persian(Native), German(Beginner), Arabic(Familiar)

## Personal Interests

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Travelling, Painting, Swimming, Playing the Violin