Ghazal Sadeghian

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Education

Bachelor of Computer Engineering — *Last Two Years: 19.29/20 (4/4)* — *GPA: 18.63/20 (3.85/4)*

AMIRKABIR UNIVERSITY OF TECHNOLOGY, TEHRAN, IRAN — *2016-Present*

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

Diploma of Math and Physics — *GPA: 19.93/20 (4/4)*

SALAM HIGH SCHOOL, TEHRAN, IRAN — *2012-2016*

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 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 Interests

Security and Privacy | **Internet of Things** | **Database**
Computer Networks | **Applied Machine Learning** | **Cryptography**

Research Experiences

Research Intern in Institute for Research in Fundamental Sciences (IPM) — *IPM*

PROFESSOR AHMAD KHONSARI — *present*

- IoT traffic analysis, and applying a state-of-the-art machine learning approach for detecting malicious packets

Teaching Experiences

"Linear Algebra and its Applications" Teaching Assistant — *Amirkabir University*

PROFESSOR MARYAM AMIR MAZLAGHANI — *2019*

"Operating System" Teaching Assistant — *Amirkabir University*

PROFESSOR NASTOOH TAHERI JAVAN — *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

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)

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 coapthon 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

Simulation of an IoT Network with Two Zigbee Nodes

Internet of Things Project

- Exchanging data sensed by a node from a LDR sensor to the other node(Implemented with Arduino and Proteus)

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)

Local Search in Super Mario Game

Artificial Intelligence Project

- Implementation of LRTA* with three different heuristics for Super Mario game (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)

Music Player

Software engineering Project

- Implementation of an application for listening to music with several formats such as mp3, ogg, wav, and showing lyrics and music visualizer for each song (Implemented in java)

Skills

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

Languages

Persian(Native), English(Fluent), German(Beginner), Arabic(Familiar)