

Ghazal Sadeghian

Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, Canada

✉ sadeghian.ghazal77@gmail.com | 🌐 GhazalSdn | 📧 sadeghian.ghazal77 | in ghazal-sadeghian-4067341b4

Education

Master of Applied Science in Electrical and Computer Engineering

GPA: 89.5/100

UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER, CANADA

Sept 2021 - Present

- Under Supervision of Prof. Mohammad Shahradsad
- Related Courses: Trade-offs in Designing Computer Systems(90/100), Distributed Systems Abstractions(89/100), Architecture for Learning Systems(95/100), Machine Learning and Data Mining(89/100), Causal ML(89/100), Systems Security(85/100)

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

Serverless Computing

Cloud Computing

Applied Machine Learning (ML4SYS)

Honors and Awards

Accepted to Google Computer Science Research Mentorship Program (CSRMP)

SELECTED BY GOOGLE TO JOIN THE PROGRAM THAT MATCHES STUDENTS WITH GOOGLE RESEARCHERS TO SUPPORT THEM IN COMPUTER SCIENCE RESEARCH THROUGH MENTORSHIP AND VARIOUS WORKSHOPS.

2023

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

Publications

Sadeghian G, Elsakhawy M, Shahradsad M, Hattori J, Shahradsad M. **UnFaaSener: Latency and Cost Aware Offloading of Functions from Serverless Platforms**

2023 USENIX ATC

A LIGHTWEIGHT FRAMEWORK THAT ENABLES SERVERLESS USERS TO REDUCE THEIR BILLS BY HARVESTING NON-SERVERLESS COMPUTE RESOURCES SUCH AS THEIR VMs, ON-PREMISE SERVERS, OR PERSONAL COMPUTERS.

Research Experiences

Graduate Research Assistant

University of British Columbia

CIRRUS LAB (UNDER SUPERVISION OF PROF. MOHAMMAD SHAHRADSAD)

2021-Present

- Latency and Cost Aware Offloading of Functions from Serverless Platforms

Undergraduate Research Assistant

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

PROFESSOR NASTOOH TAHERI JAVAN

Amirkabir University

2020

“Algorithm Design” Teaching Assistant

PROFESSOR ALIREZA BAGHERI

Amirkabir University

2020

Workshops

Matlab Workshop

TOOLS FOR SOUND PROCESSING AND IMAGE PROCESSING

Amirkabir University

2016,2017

IEEE Data Science Winter School

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

University of Tehran

2019

Amirkabir Artificial Intelligence Summer Summit

ADVANCED TOPICS IN MACHINE LEARNING, DEEP LEARNING, AND NEUROSCIENCE

Amirkabir University

2019

Projects

Improving Serverless Load Balancer Performance with Reinforcement Learning

DISTRIBUTED SYSTEMS PROJECT

- Evaluation of an RL approach to the load balancer in OpenWhisk by using the explore-resource tradeoff, in which a request is duplicated with some probability. We tried to find better decisions while still taking the best decision we know thus far at the cost of double the amount of resources.

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

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)

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

Programming Languages Python, Java, C, Bash Scripting, SQL, Assembly, Matlab (Sorted By Proficiency)

Cloud Platforms Google Cloud, AWS

Web Development HTML, CSS, Javascript, PHP, Django

Hardware Design Languages Arduino, Verilog, VHDL

Simulation Atmel studio, Proteus, OMNet++, ModelSim, AVR studio

Tools Git, \LaTeX , Wireshark

Operating Systems MacOS, Linux(Ubuntu), Windows

Languages

English(Fluent) TOEFL iBT Score: 107 [Reading: 30, Listening: 27, Speaking: 23, Writing: 27]

Persian(Native),

German(Beginner),

Arabic(Familiar)

Personal Interests

Travelling, Painting, Swimming, Playing the Violin