

Sadaf Sadeghian

ICICS/CS Building 201-2366 Main Mall Vancouver, BC Canada.
✉ sadeghian.sadaf22@gmail.com | ☎ +1 7788669330 | **in** Sadaf Sadeghian | **Q** Ssadaf | **📧** Ssadaf

EDUCATION

Master of Science in Computer Science **University of British Columbia, Vancouver, Canada**
Under Supervision of Prof. Thomas Pasquier 2021-Present
Courses : Machine Learning and Data Mining (93/100), Distributed Systems Abstractions (92/100)

Bachelor of Computer Engineering **University of Tehran, Tehran, Iran**
GPA: 19.22 / 20 (WES CGPA : 4 / 4) 2016-2021
Ranked **Second** among the CE class

RESEARCH INTERESTS

- Applied ML in Systems
- Distributed Systems
- Self-tuning Systems and Databases
- Machine Learning

HONORS AND AWARDS

- **Ranked 2nd Among the Computer Engineering class** *University of Tehran*
- **Honorary Award of FOE (Faculty of Engineering)** 2016-2017, 2017-2018, 2018-2019
Awarded to the outstanding students (top 3) of each engineering field each year.
- **University of Tehran Hamiyan Scholarship** 2017-2018, 2018-2019
Awarded for high academic achievement.
- **IEEEExtreme 13.0 Contest** 2019
Our team (OnceUponATimeInUT) ranked 2nd in Iran and globally 101st among 2,781 teams.
- **Ranked in the Top 0.13% (99.87 percentile)** 2016
Among more than 168,000 participants in the Iranian nationwide university entrance exam.
- **9th place in RoboCup Iran Open** 2015
Among more than 100 teams in the junior rescue league.
- **Iranian Olympiad in Informatics** 2014, 2012
Acceptance in the first round of Olympiad as the top 25 percent of talented Iranian students.

PUBLICATIONS

Sabri, N., Sadeghian, S. Bahrak, B. A cross-country study on cultural similarities based on book preferences. Soc. Netw. Anal. Min. 10, 86 (2020). [link]
Implemented codes for crawling data, visualizations, and analyzing the graphs, and wrote some parts of the paper.

RESEARCH EXPERIENCES

Graduate Research Assistant **University of British Columbia**
Under Supervision of Prof. Thomas Pasquier, Prof. Ivan Beschastnikh and Prof. Mathias Lécuyer 2021-Present
Working on tuning Spark configuration parameters using the causal relationship between these parameters and causal bayesian optimization.

Undergraduate Research Assistant **University of Tehran**
Under Supervision of Prof. Behnam Bahrak 2019-2020
Worked on social networks, graph analytics and machine learning projects in the Data Analytics Laboratory.

Data Scientist Intern **University of Tehran Science and Technology Park**
PAD Laboratory 2019
The "Hands-on Machine Learning" book was read and contributed to Kaggle competitions, such as the Titanic competition, house price prediction, and IEEE fraud detection. Also, passed two Coursera courses on graph analytics and did a project on the Ethereum transaction graph.

PROJECTS

Privacy-Preserving Federated Architecture for Synthetic Medical Image Generation *Distributed Systems*
We investigated generating high quality privacy-preserving data using an existing privacy-aware framework, FELICIA. Then, worked on adding more sites to FELICIA setting and making it distributed using LEAP platform so that it can be easily accessible by practitioners.

Image Generation Using GANs

Neural Networks

Implemented Variational Auto-encoder, DCGAN and CGAN for generating plausible images similar to CIFAR10 dataset images. (Implemented in Python using Keras)

GHS Algorithm for Finding MST

Distributed Systems

Implemented GHS distributed algorithm for finding minimum spanning tree in a weighted graph. (Implemented in Java using Kompics)

MapReduce Algorithm for Counting Words

Distributed Systems

Implemented distributed MapReduce algorithm for counting occurrences of each word in a text. (Implemented in Java using Kompics)

Traffic Signs Detection in Real-World Images

Neural Networks

Implemented CNN and fine-tuned it also used drop out, data augmentation and batch normalization for improving the network results. (Implemented in Python using Keras)

Air Pollution Forecasting

Neural Networks

Implemented RNN, LSTM and GRU for series prediction. and implemented various methods for handling missing values. (Implemented in Python using Keras)

New Features for xv6 kernel

Operating Systems

Implemented new features for xv6 operating system, including: new system calls, CPU scheduling and memory management. (Implemented in C)

Food Ordering Application ("Loghme")

Internet Engineering

Developed web application for online food ordering and delivery.

(Backend: Java(Spring framework) - Frontend: JavaScript(Reactjs) - DB: MySQL - Deployment: Docker, Kubernetes)

Compiler for SMOOLA Language

Compiler Design and Implementation

Implemented four phases: lexical and syntax analyzer, name analyzer, type analyzer and code generator. (Implemented in JAVA using ANTLR)

SKILLS

Programming Languages: Python, C++, JAVA, C

Database: MySQL, SQLServer

Machine Learning: Numpy, Pandas, Seaborn, Scikit-learn, Keras, Pytorch

Web Development: Django, React, JavaScript, HTML, CSS

Tools: Git, \LaTeX , Wireshark, Maven, Mininet, Gephi, Postman, Jupyter notebook, networkx

Operating Systems: Linux(Ubuntu), MacOS, Windows

Hardware Design: Verilog, SystemVerilog, ModelSim

LANGUAGES

Persian (Native), English (Fluent)

TOEFL iBT Score: 105 [Reading: 30, Listening: 24, Speaking: 23, Writing: 28]

TEACHING EXPERIENCES

Machine Learning and Python Instructor

IEEE Data Science Winter School, University of Tehran

Taught python and its useful libraries, designed hands-on problems, and helped participants in ML hands-on sessions.

2019

Teaching Assistant

University of Tehran

"Operating Systems" Professor M. Kargahi

2019-2021

"Database Design" Professor A. Shakery

2019-2021

"Artificial Intelligence" Professor H. Fadaei and Professor H. Moradi

2019-2020

"Data Structures" Professor F. Faghhi

2020

"Formal Language and Automata" Professor H. Hojat

2019-2020

"Advance Programming" Professor R. Khosravi and Professor A. Sadeghi

2018-2019

"Discrete Mathematics" Professor S. Mohammadi

2018-2019

VOLUNTEERING EXPERIENCES

Member of FSEN Student Branch and Organizing Team

FSEN Conference 2019, Tehran

Member of Organizing Team

Machine Learning Summit 2019, Tehran

Core Member

ACM student branch of University of Tehran

We managed and organized scientific events including seminars, conferences, workshops and contests for students.

WORKING EXPERIENCES

Back-End Developer (Intern)

Lamasoo Company, 2018

I worked as a developer in a hotel booking startup.

Front-End and Back-End Developer

Summer of Code (University of Tehran), 2017

We developed a site for online contests held in the university.

INTERESTS

Hiking, Photography, Swimming, Travelling, Playing the Piano, Reading Books, Volunteer Work