Sara Ghaemi

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Education

MSc in Software Engineering and Intelligent Systems   **Sep 2018–Present**
University of Alberta   *Edmonton, Canada*
- Relevant Coursework: Machine Learning, Software Quality, Engineering Dependable Systems, Cyberphysical Systems
- GPA: 3.9/4 | Expected completion: Jan 2021

BSc in Electrical Engineering, Electronics   **Sep 2013–Feb 2018**
Amirkabir University of Technology   *Tehran, Iran*
- Relevant Coursework: Multimedia Systems, Advanced Programming, Probability and Statistics, Computer Architecture and Microprocessors, Introduction to Computational Intelligence
- Total GPA: 3.5/4 via 140 credits | last 2 years: 3.82/4

Experience

Research Assistant   **Aug 2019-Present**
Performant and Available Computing Systems (PACS) Lab, York University   *Toronto, Canada*
- Working on using blockchain technology in serverless computing.
- Using **Django** framework to develop a web application for this project in **Python**.

Research Assistant   **Sep 2018-Aug 2019**
Dependable and Distributed Systems Lab, University of Alberta   *Edmonton, Canada*
- Working on using distributed ledger technology in transactive microgrids.

Teaching Assistant   **Jan 2019-Apr 2019**
Introduction to Microprocessors Lab, University of Alberta   *Edmonton, Canada*
- Supervised about 30 students in each lab to program an NXP ColdFire microprocessor using assembly language.

Research Assistant   **May 2014-Feb 2018**
Control of Multi-Vehicle Systems Lab, Amirkabir University of Technology   *Tehran, Iran*
- Developed different computer vision programs for localization and object detection of quadcopter and UGV robots.
- Collaborated with a team of 10 to integrate the programs into the robots.

Teaching Assistant   **Feb 2017-Jun 2017**
Advanced Programming Course, Amirkabir University of Technology   *Edmonton, Canada*
- Taught **Python** programming language to about 25 undergraduate students.

Chair of IEEE Student Branch (IEEE SB)   **May 2015-Jul 2016**
AmirKabir University of Technology   *Tehran, Iran*
- Led a team of 5 to plan and execute about 18 events, workshops, and student competitions.
- IEEE Amirkabir University SB recieved the "Student Branch Excellence Award" from IEEE Iran Section in May 2016.

Selected Projects

An Analysis of Travis CI Build Failures   **Feb 2019-Apr 2019**
University of Alberta   *Edmonton, Canada*
- Analyzed TravisTorrent dataset to investigate build failures in Travis CI using **Python** and **R**.
- Found the most important factors that result in CI build failures.
- Used logistic regression to find statistically significant features.

Implementation of an Othello Player
University of Alberta

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Feb 2019-Apr 2019
Edmonton, Canada

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- ○ Worked in a team of two to implement an open source Othello game player program in **Python**.
- ○ Developed a GUI with **PyQt5** for the program.

Design and Implementation of a Prototype of an Indoor Smart Parking
Amirkabir University of Technology

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Sep 2017-Apr 2018
Tehran, Iran

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- ○ Designed and implemented hardware required to detect the status of a parking spot (empty or full), and send this information to a server.
- ○ Developed **C/C++** code for microcontrollers of the hardware devices.
- ○ Developed a simple web application using **Django** framework in **Python** to visualize the status of all parking spots in the parking lot's map.

Face Recognition Using CNN in MATLAB
Amirkabir University of Technology

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Nov 2016-Jan 2017
Tehran, Iran

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- ○ Used transfer learning in **MATLAB** for face recognition.
- ○ The program was trained to recognize five specific people.

Handwritten Digit and Alphabet Recognition With Image Processing in Python
Amirkabir University of Technology

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Mar 2016-Jun 2016
Tehran, Iran

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- ○ Worked in a team of two to develop a program that detects and tracks hand in the webcam video and recognizes the digit or alphabet written by hand.
- ○ Used **OpenCV** and **Python** to train a model to detect and track hand.
- ○ Used **PyQt** to develop a GUI for the program.

Localization by Fusing ARUCO Library and Encoder Data on a UGV Robot
Amirkabir University of Technology

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Aug 2015-Oct 2015
Tehran, Iran

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- ○ Worked in a team of two on using image processing and encoder data for robot localization in a room.
- ○ Used **C++** and **OpenCV** for QRCode detection to find the robot's location and pose.

Technical Skills

Programming Languages: Python, C/C++, MATLAB

Tools: Git, Docker, Travis CI

Publications

Fan, C., Ghaemi, S., Khazaei, H., Chen, Y., & Musilek, P. (2019). Performance Analysis of DAG-based Distributed Ledgers. Transactions on Modeling and Performance Evaluation of Computing Systems (Submitted)

Awards and Honors

IEEE Student Branch Excellence Award
IEEE Iran Section

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May 2016
Shiraz, Iran

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- ○ Recieved this award from IEEE Iran Section while responsible for IEEE Amirkabir University Student Branch.

University Entrance Exam Exemption
Amirkabir University of Technology

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Sep 2013
Tehran, Iran

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- ○ Admitted to BSc program without participating in university entrance exam due to international achievements in robotics competitions.

Best Robot Performance and 3rd Place Award for Junior Soccer Robot
Junior Soccer League at Robocup International Competition

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Jul 2011
Istanbul, Turkey

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- ○ Worked in a team of 4 to develop junior soccer robots which received two major awards in Robocup international competitions.