

Maryam Mahmoudi Gharai

2424, 22a st NW
Calgary, Alberta

+1-(587)-968-1706

mmahmudi2000@gmail.com

Linked  [Maryam Mahmoudi's Profile](#)

Education

- **University of Calgary** Sep 2021 - Present
Master of Science in Financial Mathematics
 - Advisors: Dr. Sezer & Dr. Zareipour
- **Ferdowsi University of Mashhad (Iran)** Sep 2015 – Feb 2020
Bachelor of Science in Electrical Engineering - Control Systems
 - **Final Project:** Steel Stock Market Time Series Forecasting with LSTM networks, Advisor: Dr. Akbarzadeh Totonchi
 - **Last Year GPA : 3.7/4 , Overall GPA : 3.5/4**

Research Interests

- Mathematical Modelling
 - Differential Equations
 - Machine Learning Methods
- Data Science
- Systems & Control

Selected Projects

- **Steel Stock Market Time Series Forecasting with LSTM networks**, *Senior Project, Fall 2020*
Used Python (Keras library) for predicting the real world data of steel stock market time series with LSTM networks
- **Multilayer Perceptron (MLP) for Time Series Forecasting**, *Dr. Akbarzadeh-Totonchi, Spring 2019*
Used Python (Scikit-learn library) for predicting the behavior of Mackey-Glass time series with MLP
- **IOT based Smart Mirror with Raspberry Pi**, *Dr. Asadi, Fall 2019*
Used Raspberry Pi, Arduino & leap motion for controlling the lighting of the house
Implemented face detection & recognition using OpenCV
- **Simulink Implementation of Newell-Le forced- Circulation Evaporator**, *Dr.Pariz, Fall 2019*
Designed the block-diagram of the Nowell Le forced evaporated in Simulink
Compared performance of PI, PD, PID controllers in cases such as settling time & overshoot
- **Modelling of LQR Controller with Matlab**, *Dr.Hosseini Sani, Spring 2018*
Modelled regulation of the pressure in air-operated absorber spring of the vibrating mechanical system with LQR controller
- **Flood it Game with C language**, *Dr. Fazl-Ersi, Spring 2016*
Implemented the full game of "Flood-it!" from scratch including a user friendly platform, adjustable size of game board and multiple save and load options with C

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Honors

- Ranked as **top 15%** among 2015 class of Electrical Engineering, Ferdowsi University of Mashhad, Iran
- **Awarded fellowship**, Undergraduate Program, Department of Engineering, Ferdowsi University of Mashhad
- Ranked as **top 0.5%** in National Entrance Exam of University (Konkour) among all university applicants of 2015 under Mathematics & Physics discipline in Iran

Relevant Experiences

- **Graduate Research Assistant** Jan 2022 - Present
University of Calgary
Doing research on ramps in wind power generation
- **Researcher & Data Analyst** Oct 2020 – March 2021
EIDA consulting
Did research on
 - European power plants
 - long & short term power forecast
 - PPA analysis
 - machine learning methods for forecasting the weather behavior
- **Data Scientist** Sep - Dec 2019
Zist Pardazesh Aria Company
 - Predicted each one of the flow, pressure, pump voltage and current of 10 wells around Mashhad with machine learning methods such as KNN & SVR

Teaching Experiences

- **Graduate Teaching Assistant of MATH 277** Jan 2022 - Present
Under the Supervision of Dr. Balehowsky, University of Calgary
- **Graduate Teaching Assistant of MATH 376 (Differential Equation 1)** Sep 2021 – Dec 2021
Under the Supervision of Dr. Liao, University of Calgary
- **Teaching Assistant of Electrical Circuits (Computer Eng.)** August 2020- Jan 2021
Under the Supervision of Dr. Pourreza
May - June 2020
- **Teaching Assistant of Linear Systems & Control** Oct 2018 - Feb 2019
Under the Supervision of Dr. Hosseini Sani

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Selected Courses

M.Sc. Courses

- **Stochastic calculus for finance**, University of Calgary, *Dr. Sezer*, Fall 2021
- **Advanced power system analysis**, University of Calgary, *Dr. Zareipour*, Fall 2021
- **Theory of Probability**, University of Calgary, *Dr. Swishchuk*, Fall 2021

Online Courses

- **Fundamentals of Machine Learning for Healthcare**, Coursera, *Stanford University*, Oct 2020
- **Game Theory**, Coursera, *Stanford University*, Sep 2020
- **Computer Vision Basics**, Coursera, *University of Buffalo*, July 2020

B.Sc. Courses

- **Soft Computing** (Graduate Course), *Dr. Akbarzadeh-Totonchi*, Spring 2019
- **Advanced Control Systems**, *Dr. Naghibi Sistani*, **Grade: A+ (ranked 2nd)**, Fall 2018
- **Advanced Programming & IOT**, *Dr. Ghiasi-Shirazi*, **Grade: A**, Fall 2018
- **Digital & Non-linear Control Sys.**, *Dr. Hosseini Sani*, **Grade: B+ (ranked 1st)**, Spring 2018
- **Linear Algebra**, *Dr. Akbarzadeh-Totonchi*, Spring 2018

Skills

Programming

- Python
- C
- R
- Verilog

Software

- MATLAB
- orCAD PSpice
- Keil
- ModelSim
- LOGO (PLC)
- PowerWorld

Hardware

- ARM
- Arduino
- Raspberry Pi

Others

- Machine Learning Algorithms (Neural Networks, Genetic Algorithm, etc.)
- LaTeX

Language Proficiency

- English (Fluent)
IELTS: 7.5 (Listening: 8 Reading: 7 Writing: 6.5 Speaking: 7.5)
- Persian (Native Speaker)
- Japanese (Intermediate)
- French (Beginner)