## Reza Rostam

Embedded software engineer, machine learning researcher, control systems engineer

**\( +1-604-339-3827** 

✓ reza.rostam@mech.ubc.ca✓ pooya.rostam@gmail.com

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mrrostam.github.io

#### SUMMARY OF QUALIFICATIONS

- Strong programming skills with several languages (Assembly, C/C++, Python, MATLAB)
- Deep knowledge of embedded systems and real-time OSs
- Strong knowledge of sensors, actuators, and instrumentation
- Expert in designing and implementing various controllers (adaptive, robust, nonlinear, optimal)
- Highly skilled machine learning scientist
  with over 4 years of experience in academic and industry settings
- More than 10 years of **research experience** internationally

## **\$** EXPERIENCES

#### **Embedded Software Engineer**

**Picovoice** 

Ct 2020 - Ongoing

**♀** Vancouver

• Developing an embedded platform for an advanced NLP algorithm

#### Graduate Research Assistant

**Control Engineering Laboratory** 

Sep 2016 - Ongoing

**◊** Vancouver

- Managing research partnership with the industrial partner
- Mentoring four undergraduate and two Master of Science students on various research projects
- Conducting journal reviews for three scientific journals
- Engaging students in extracurricular academic activities while being the VP Finance of the Mechanical Engineering Graduate Association

#### Research And Development Engineer

FanKavan Ara

m Dec 2015 - Jul 2016

**♀** Tehran

- Supervised two engineers as the head of the mechatronic division
- Developed PCBs as well as software interfaces for data-loggers

#### Research And Development Engineer

Aral research Co.

∰ Apr 2014 - Sep 2014

**♀** Tehran

• Studied extensively and simulated the effect of various parameters on the performance of magnetic lenses

#### Project Leader

**UBC Centre for Community Engaged Learning** 

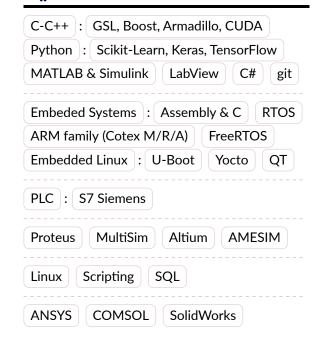
₩ Oct 2019 - Mar 2020

**◊** Vancouver

#### AREAS OF EXPERTISE

- Embedded Systems
- Mechatronic/Control Systems
- Machine Learning & Time Series Analysis
- Intelligent Signal Processing
- Optimization & Applied Mathematics
- Mechanical Vibrations (Nonlinear & Continuous)

## **COMPUTER SKILLS**



## **EDUCATION**

#### Ph.D. in Control Systems

The University of British Columbia

## Sept 2016 - Present

Thesis: A Hybrid Gaussian Process Approach to Robust Economic Model Predictive Control

# M.Sc. in Mechanical Engineering Sharif University of Technology

## Sept 2013 - Feb 2016

Thesis: Control of Adaptive Optics Systems Using Transverse Actuators

# B.Sc. in Mechanical Engineering Iran University of Science and Technology

## Sept 2009 - June 2013

• Led a group of 20 students, after taking a series of workshops, to enhance the quality of education for kids in BC

#### PROJECTS

# Robust Economic Model Predictive Control with Application to Solar Thermal Systems

**Natural Sciences and Engineering Research Council** 

**#** 2020

**♥** Vancouver

- Developing a new control system combining the model predictive control scheme with a machine learning technique called Gaussian process
- The proposed system is able to deal with quasi-periodic unknown disturbances such as energy demand in renewable energy systems

#### **Train Monitoring System**

FanKavan Ara

**#** 2016

**♀** Iran

• Designed a portable data-logger for monitoring the ride comfort as well as the wheelset's temperature

# GM Locomotive's DC Traction Motor Condition Monitoring and Fault Diagnostics using Artificial Neural Network Iran Railways

**2015** 

**♀** Tehran

 Developed an intelligent monitoring system using vibration analysis based on the discrete wavelet transform and Learning Vector Quantization artificial neural network

# Design and Fabrication of the Magnetic Electron Lens for a Transmission Electron Microscopy

Ara research

**2014** 

**♀** Tehran

• Built a magnetic electron lens, during a 3-month project, to be implemented inside a Transmission Electron Microscopy

## Active Noise Control in Pardis Coach using Different Fuzzy Controllers

Iran University of Science and Technology

**2012** 

**♀** Tehran

• Designed a fuzzy controller to suppress the noise inside the coach

# Dynamic Analysis of MD523 Bogie with ADAMS/Rail Iran University of Science and Technology

**## 2012** 

**♀** Tehran

 Modeled and simulated An MD523 bogie in Adams/rails based on manufacturing documents

### CERTIFICATIONS

- Essentials of Productive Teams (Mitacs)
- Foundations of Project Management (Mitacs)
- Design and Implementation of Smart Automation Systems (Shrif University)

## **COURSES TAUGHT**

- Modeling of Mechatronic Systems
- Mechatronics System Instrumentation
- Automatic Control
- Modelling of Dynamic Systems
- Modern Control Engineering
- Mechanical Vibration
- MATLAB & Simulink for Engineers

#### SELECTED COURSES

- Advanced Machine Learning
- Machine Learning and Data Mining
- Introduction to Artificial Intelligence
- Control Sensors and Actuators
- Modelling of Dynamic Systems
- Foundations in Control Engineering
- Multi-variable Feedback and Robust Control
- Self-Tuning and Adaptive Control
- Optimal Control

#### **Q** HONORS & AWARDS



**Linux Foundation Training Scholarship** to become Certified System Administrator



Faculty of Applied Science Award in recognition of the research achievement



**Best Presentation Award** 

BC universities "Systems&Control" meeting



Four Year Fellowships (FYF)

in recognition of the academic achievement



Ranked 1st

amongst the B.Sc. alumni



#### Prof. Ryozo Nagamune

m University of British Columbia

🔽 nagamune@mech.ubc.ca