Reza Rostam

Embedded software engineer, machine learning researcher, control systems engineer

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SUMMARY OF QUALIFICATIONS

- Strong **programming skills** with several languages (C/C++, Python, MATLAB, Assembly)
- Highly skilled **machine learning scientist** with over 4 years of experience in academic and industry settings
- 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)
- More than 10 years of **research experience** internationally

EXPERIENCES

Embedded Software Engineer

Picovoice Inc.

Oct 2020 – Ongoing Vancouver

- Developing platforms for an advanced NLP algorithm
- Optimizing the NLP engine code to increase its speed

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

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

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

C-C++ : GSL, Boost, Armadillo, CUDA
Python : Scikit, Keras, TensorFlow, PyTorch
MATLAB & Simulink | LabView | git

Embeded Systems : Assembly & C
ARM family (Cotex M/R/A) | FreeRTOS
Embedded Linux : U-Boot | Yocto | QT

PLC : S7 Siemens

Proteus | MultiSim | Altium | AMESIM

Linux | Scripting | SQL

ANSYS | COMSOL | SolidWorks

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

HONORS & AWARDS

Linux Foundation Training Scholarship
to become Certified System Administrator

Mitacs Research Training Award Proposal
in recognition of the research achievement

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

REFEREES

Prof. Ryozo Nagamune
University of British Columbia
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