Mohammadreza Rostam

Personal Data

Current place of residence:	414-2875 Osoyoos Crescent, Vancouver, BC, V6T 2G3
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Education

September 2016 – Present
Ph.D. in Mechanical Engineering
The University of British Columbia, Vancouver
Thesis:"A Hybrid Gaussian Process Approach to Robust Economic Model Predictive Control of an Integrated Solar Thermal System"
Supervisor: Dr. Ryozo Nagamune

Feburary 2016 – September 2013
Master of Science in Mechanical Engineering
Sharif University of Technology, Tehran
Thesis:"Control of Adaptive Optics Systems Using Transverse Actuators"
Supervisor: Professor MirAbbas Jalali
I was a member of a group working on Adaptive optics for very large telescopes. My task, in particular, was developing an optimal control system for deformable mirrors used in telescopes.
Average: 18.32 / 20

June 2013 – September 2009
Bachelor of Science in Rolling stock Engineering
Iran University of Science and Technology, Tehran
Thesis: "Vibration Suppression of Straight and Curved Beams Traversed by Moving Loads"
Supervisor: Professor Davood Younesian
Average: 18.83 / 20

June 2009 – September 2005
High school and Pre-University Diplomas in Physics and Mathematics
Allame Helli High School, National Organization for Development of Exceptional Talents(NODET), Tehran
Average: 19 / 20

Research Interests

- Control System Design for Mechatronics Systems
- Machine Learning & Time Series Analysis
- Intelligent Signal Processing
- Mechanical Vibrations & Nonlinear Dynamics
- Applied Mathematics & Optimization

Publications

1. Mohammadreza Rostam, Ryozo Nagamune, and Vladimir Grebenyuk
   Robust Economic Model Predictive Control using a Self-Tuning Kernel Gaussian Method (submitted)
2. Mohammadreza Rostam, Ryozo Nagamune, and Vladimir Grebenyuk
   A Hybrid Gaussian Process Approach to Robust Economic Model Predictive Control
   Journal of Process Control, Volume 92, 2020, Pages 149-160
3. Mohammadreza Rostam, Ryozo Nagamune, and Vladimir Grebenyuk
   Analysis of Economic Model Predictive Control Parameters Selection in an Integrated Solar Thermal System
   The 3rd IEEE Conference on Control Technology and Applications (CCTA 2019)
4. Mohammadreza Rostam, Ryozo Nagamune, and Vladimir Grebenyuk
   Switching Gain-Scheduled Linear-Quadratic-Regulator Control for Integrated Solar Thermal Hydronic Systems
   2018 Annual American Control Conference (ACC), 2581-2586
5. M.R. Rostam, F. Javid, E. Esmailzadeh, D. Younesian
   Vibration suppression of curved beams traversed by off-center moving loads
   Journal of Sound and Vibration, Volume 352, 15 September 2015, Pages 1-15
6. D. Younesian, S. Hamzavi , M.R. Rostam
   Active Noise Control in Pardis Coach using Different Fuzzy Controllers
   International Journal of Automotive Engineering, Volume 4, 2014, Pages 834-845
7. D. Younesian, M.R. Rostam
   Asymptotic Solutions and Stability Analysis for Vibration of Moving Cables under Multi-frequency Excitation (In Preparation)
8. D. Younesian, M.R. Rostam
   Spectrum analysis of Y25 bogie by SRSS and CQC method (In Preperation)

Honors and Awards

- Earned "Linux Foundation Training (LiFT) Scholarship", 2020
- Awarded the **Best Presentation Award** at the 2nd BC universities "Systems and control" meeting
- Earned "Four Year Fellowships (FYF) For PhD Students" in recognition of the academic achievement, 2016-2020
- Earned "Faculty of Applied Science Graduate Award" in recognition of the academic achievement, 2016
- Exempted from the entrance examination and tuition to pursue graduate studies at Sharif University of Technology (in recognition of excellent academic performance).
- Ranked 1st amongst the B.Sc. alumni
- Distinguished B.Sc. student of the year 2009-2010,2010-2011, 2011-2012 and 2012-2013
- Awarded Full scholarship to study at Iran University of Science and Technology for Undergraduate Program.
- Entry to High School and Junior School, Allameh Helli, NODET (National Organization for Development of Exceptional Talents) by passing national competitive exams
- One of my papers ranked 9th in ScienceDirect Top25 list

Teaching and Research Experiences

- **Teaching Assistance:**
  - Technical Skills Practicum - Instrumentation (MECH 220) - Instructor: Dr. Dr. Agnes d'Entremont, 2019
  - Mechatronics System Instrumentation (MECH 421) - Instructor: Dr. Minkyn Noh, 2019
  - Modeling of Mechatronic Systems (MECH 366) - Instructor: Dr. Nagamune, 2018 & 19
  - Foundations in Control Eng (MECH 522) - Instructor: Dr. Nagamune, 2018 & 19
  - Modern Control Engineering (MECH 468) - Instructor: Dr. Nagamune, 2018
  - Modelling of Dynamic Systems (MECH 529) - Instructor: Dr. DE SILVA, 2017
  - Dynamic System Modeling (MECH 469) - Instructor: Dr. DE SILVA, 2017
  - Mechanical Vibrations (MECH 463) - Instructor: Dr. Mallakzadeh, 2017
  - Automatic Control (MECH 466) - Instructor: Dr. Nagamune, 2017 & 18 & 19
  - Thermodynamics 1 - Instructor: Dr. Talaei, 2011 & 2012
  - Strength of Materials - Instructor: Dr. Chamani, 2011
- **Professional Experience:**
  - Apprenticeship at Tehran Wagon Manufacturing Co.
  - Apprenticeship at Aral Group Company
  - Engineer at Ara-reseach Company, Head of Research & Developments
- **Teaching Experience:**
  - MATLAB & Simulink for Engineers - Mechanical Department of Sharif University of Technology - Summer & Fall 2015

Community and Volunteer Experience

- **Leader:**
  - Community Leadership Program (CLP) at UBC: I was a project leader in the CLP runs by UBC Centre for Community Engaged Learning. CLP is a 6-month program that combines content-driven workshops that lead into the practical application of leadership concepts during a community project experience.
- **Member of Executive Committee of the Mechanical Engineering Graduate Students' Association (MEGA):**
  - "VP Finance of the MEGA at UBC for two consecutive years (2018-2019 & 2019-2020)"
- **Member of Executive Committee:**
  - "International Conference on Recent Advances in Railway Engineering (ICRARE2013)" Volunteer Member of Executive Committee at International Conference on Recent Advances in Railway Engineering (ICRARE2013).
- **Volunteer Teacher:**
  - Let's talk Science at UBC: Lead students to do hands-on activities in Vancouver.
- **Mentor:** https://www.uroubc.com/

- Undergraduate Research Opportunities (URO) Program at UBC: Coach undergraduate students to complete a research project in Control using Matlab/Simulink and Lead them to present their results at 2019 Multidisciplinary Undergraduate Research Conference.
  Project title: / How can a drone move the most efficiently given the effect of wind?

- **Volunteer, Scientific Association of Railway Engineering School:**
  - I was a member of Scientific Association of Railway Engineering School at Iran University of Science and Technology.

Computer Skills

Programming:	C/C++: GSL, Boost, Armadillo, OpenMP, CUDA Python: Scipy, Numpy, scikit-learn, Pandas, TensorFlow C#
Mathematics:	MATLAB & Simulink | Mathematica | Maple
Technical Softwares:	Expert in ANSYS(APDL & Workbench) | LabView | gnuplot Familiar with ADAMS | SolidWorks
Circuits Simulation and Analysis:	Proteus | MultiSim
Dynamics simulation:	AMESIM | TRNSYS
Electronics design:	Altium
Micro-controller:	ARM | 8051 (Assembly & C) | AVR (Code Vision - Arduino)
Typesetting:	LaTeX
Operating Systems:	Expert in Linux (Bash Scripting & SysAdmin)
Database:	SQL
Scientific Graphic Editor:	Inkscape | TikZ