Bahram Yaghooti

Curriculum Vitae

Control laboratory
Department of Mechanical Engineering
Sharif University of Technology, Tehran, Iran

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Education

Sharif University of Technology   *Tehran, Iran*

- *M.Sc., Mechanical Engineering (Major: Control)*   *2013 - 2015*
  - GPA: 18.25/20
  - Thesis: *Developing Design Methods for Adaptive Fractional Order PID Controller*
        Supervisor: Prof. Hassan Salarieh
- *B.Sc., Mechanical Engineering*   *2009 - 2013*
  - GPA: 16.30/20, GPA of 17.19/20 for upper-division courses (last 4 semesters)
  - Thesis: *Development of Simulation Software for Global Navigation Satellite System (GLONASS)*
        Supervisor: Prof. Hassan Salarieh

  Remark: **Sharif University of Technology** is the most prestigious technical university in Iran.

Shahid Madani High School   *Tabriz, Iran*

- *Pre-University and High School Diplomas in Mathematics and Physics*   *2005 - 2009*
  - GPA: 19.72/20

Research Interests

- Control Theory and Dynamical Systems
- Cyber-Physical Systems
- Networked and Distributed control
- Optimal Control Optimization
- Mechatronics and Robotics
- Stochastic Control
- Adaptive Control
- Machine Learning

Publications

Journal Papers

- **B Yaghooti**, H Salarieh. *Robust Adaptive Fractional Order Proportional Integral Derivative Controller Design for Uncertain Fractional Order Nonlinear Systems Using Sliding Mode Control*, Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering 232, no. 5 (2018): 550-557.
- K Safavi, **B Yaghooti**, I Moghimi, H Salarieh, A Alasty. *Force and Tensile Analysis of Double Press Machine in Use with Single-action Die Press*, Journal of Solid and Fluid Mechanics, (2016): 167-177.
- **B Yaghooti**, K Safavi, R Hajiloo, H Salarieh. *Adaptive Delayed Feedback Control of Uncertain Fractional Order Chaotic Systems Using Sliding Mode Control*, Submitted to Journal of Computational and Applied Mathematics.

- **B Yaghooti**, Ali Siahi Shadbad, K Safavi, H Salarieh. *Adaptive Synchronization of Uncertain Fractional Order Chaotic Systems Using Sliding Mode Control Techniques*, Submitted to Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering.

Conference Papers

- **B Yaghooti**, K Safavi, H Salarieh. *Tuning Fractional Order Proportional Integral Controllers Using Dominant Pole Placement Method*, International Conference in New Research of Industry and Mechanical Engineering, University of Tehran, Tehran, Iran, (2015).
- K Safavi, M Abediny, **B Yaghooti**, A Alasty, MR Movahhedy. *Design and Development of Controller and Converter of Standard G-Code for Hexaglide CNC*, International Conference in New Research of Industry and Mechanical Engineering, University of Tehran, Tehran, Iran, (2015).

Honors and Awards

- Ranked **4th** among more than **20,000** Participants in Nationwide Entrance Exam for M.Sc. Degree in Mechanical Engineering, 2013.
- Ranked **9th** in the National Mechanical Engineering Olympiad, 2013.
- Ranked **116th** among more than **300,000** Participants in the National Entrance Exam for B.Sc. Degree, 2009.
- Ranked **1st** among High School and Pre-University students, 2005-2009.
- Entry to junior school and high school, Shahid Madani, NODET (National Organization for Development of Exceptional Talents) by passing a national competitive exam, 2002 and 2005.
- **Youngest Student** of My Classes by Studying Grades 2 and 3 of Primary School in 1 Year.

Skills

- **Programming and Mathematics:** C/C++, MATLAB & Simulink, Mathematica
- **Microcontroller:** ARM (CooCox), AVR (CodeVisionAVR), Arduino
- **PLC Programming:** SIMATIC Manager (PLC S7-300/400)
- **CAD/CAM/CAE Softwares:** SolidWorks, CATIA, ANSYS (Workbench), Nastran & Patran
- **Mechanisms and Robotics:** ADAMS
- **Automation Systems:** LabVIEW, Automation Studio
- **Circuits Simulation and Analysis:** Proteus
- **CNC Programming:** G-code
- **Miscellaneous:** LATEX, Microsoft Office

Research and Work Experience

- **Control laboratory, Sharif University of Technology**   Tehran, Iran
  Research Engineer, Under Supervision of Prof. Salarieh   Oct. 2016 - present
  - Modeling and Control of Flexible Structures
  - Design and Manufacture of Motion Simulator and Hardware-In-the-Loop (HIL) Test System
  - Design and Manufacture of Vibration Analyzer and Modal Testing

- **Fankavan Aral Company**   Tehran, Iran
  Control and Mechatronics Engineer   Jan. 2016 - Sep. 2016
  - Design and Development of a Distributed Control and Monitoring System for Automatic Fault Detection of Railway Vehicles

- **Control laboratory, Sharif University of Technology** Tehran, Iran
  Research Assistant, Under Supervision of Prof. Salarieh May 2014 - Sep. 2015
    - Developing Adaptive Fractional Order PID Controller Design Methods for Fractional Order Systems
    - Design and Implementation of Controller and Converter of Standard G-Code for Hexaglide CNC
- **Iran Khodro Company (IKCO)** Tehran, Iran
  Mechanical Engineer (Joint Project between IKCO and Sharif University) Dec. 2013 - Feb. 2014
    - Dynamic and Stress Analysis of Hitachi Double Press Machine
- **Control laboratory, Sharif University of Technology** Tehran, Iran
  Research Assistant, Under Supervision of Prof. Salarieh Jan. 2013 - Jun. 2013
    - Development of Simulation Software for Global Navigation Satellite System (GLONASS) with C++
- **Durali System Design and Automation Center** Tehran, Iran
  Intern, Under Supervision of Prof. Durali Summer 2013
    - Wind Turbine Gearbox Detailed Design
- **Tabriz Oil Refining Company, Instrumentation and Control Devision** Tabriz, Iran
  Intern Summer 2012
- **Physics and Mathematics Department of Ghalamchi Organization** Tehran, Iran
  Editor Feb. 2010 - May 2012

Teaching Experiences

- Teaching Assistant, **Automatic Control Lab.** *Spring 2015*
  Instructor: Prof. Hassan Salarieh
- Teaching Assistant, **Solid Mechanics Lab.** *Spring 2014*
  Instructor: Prof. Mohsen Asghari
- Teaching Assistant, **Design of Machine Elements II** *Fall 2013*
  Instructor: Dr. Hossein Nejat Pishkenari
- Teaching Assistant, **Solid Mechanics Lab.** *Fall 2013*
  Instructor: Prof. Mohsen Asghari

Selected Course Projects

- **Adaptive PID Controller Design for Nonlinear Systems Using Lyapunov Approach**
  Nonlinear Control, under supervision of Prof. Vossoughi *Spring 2014*

- **Design, Manufacture, and Control of a Double Pendulum**
  Mechatronics Lab., Team Project, under supervision of Prof. Vossoughi *Fall 2014*
    - Control implementation (a DC-Motor with a gear-box attached to a disk) Using the **STM32F407VG** Microcontroller
    - Comparison between Simulation and Experimental Results Using PID Controller

- **Design of Hydraulic, Pneumatic and Automation Systems**
  Hydraulics and Pneumatics, Team Project, under supervision of Prof. Durali *Spring 2013*
    - Design of a **Power Pack**
    - Design of a **Compressed Air System**

- **Design of Mechanical Machines Elements**
  Design of Machine Elements II, Team Project, under supervision of Prof. Durali *Spring 2012*
    - Design of **Belts, Chains, Drums, and Pulleys of a Power Transmission System**
    - Design of **Gearbox** of Power Transmission System of a Ropeway
    - Design of **Rear Axle of a Truck**

- – Design of a **Clutch**
- **Analysis of Structures Using Finite Element Method**
  Applied Finite Element Methods, under supervision of Prof. Naghdabadi   *Spring 2013*
  - – Modal and Transient Analysis, Buckling Analysis, Contact Analysis, Optimization Analysis
- **Stress Analysis**
  Solid Mechanics III, under supervision of Prof. Naghdabadi   *Fall 2012*
  - – Thick-Walled Functionally Graded Cylinder Subjected to Temperature Gradient with Properties varying Exponentially along the Radius

Certificates

- **ARM Microcontroller Programming**, Tehran Institute of Technology

- **AVR Microcontroller Programming**, Tehran Institute of Technology

- **PLC S7-300/400 Programming**, Sharif University of Technology

- **Network+**, LAITEC, Sharif University of Technology

- **Fluid-Structure Interaction Workshop, Sharif University of Technology**, Sharif University of Technology

Language Skills

- English: Fluent
- Turkish: Native
- Persian: Native
- Arabic: Beginner

References

Prof. Hassan Salarieh
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Prof. Gholamreza Vossoughi
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