4) Designed a <u>hybrid nonlinear adaptive</u> controller for a multiport converter. While all available methods by which to stabilize such converters are linear, the proposed nonlinear controller can eliminate some signal measurements and avoid input saturation.

2006-2009   Iran University of Science and Technology, Tehran, Iran
Position: Research Assistant
1) Studied the dynamics and attitude control of spacecraft when torque is provided by flying wheels rather than thrusters. The research resulted in the discovery of the chaotic behavior of such systems, and under-actuated control methods by which to stabilize the line-of-sight.

Proposal Samples:

1) H. Zargarzadeh (PI)

Position: Faculty

Fall 2013: ECE356, Systems and Controls

Fall 2013: ECE593w, Advanced Topics in Software Engineering

Spring 2014: ECE356, Systems and Controls

Spring 2014: ECE530, Engineering Data Acquisition

2012   Missouri University of Science and Technology, Rolla, Missouri

Position: Teaching Assistant

Summer 2012: EE231, Modern Control Engineering

2007-2008   Iran University of Science and Technology, Tehran, Iran

Position: Teaching Assistant

Fall & Spring 2008: Control Systems Lab

1999   SAIPA Co. (automobile manufacturer), Tehran, Iran

Position: Intern

Summer 1999: PLC programming using ladder diagrams

Administrative Positions:

2013-2014   Southern Illinois University (SIU), Carbondale, Illinois

Position: Graduate Academic Advisor, September 2013 – July 2014

Awards and Honors:

1) Best presenter runner-up at sixth annual poster presentation of ISC-supported researchF5 11.f1 0 0 1 485.5 39788 0

Professional Experience and Leadership:

Advisor (2013-2014), Southern Illinois University Robotics Club ([Facebook Link](#))

Advisor (2014-present), Robotics Club of SEMO ([Facebook link](#))

Technical Advisor (2012 and 2013), FIRST Local Robotics Competitions

Member, IEEE (2006-present)

Reviewer, *IEEE CDC and ACC Conferences*

Reviewer, *Transactions of the Institute of Measurement and Control*

Reviewer, *IEEE Transactions on System, Man and Cybernetics*

Reviewer, *IEEE Transactions on Neural Network and Learning Systems*

Reviewer, *International Journal of Adaptive Control and Signal Processing*

Industrial Experience:

Panam Azma, Tehran, Iran, 2001-2005

Position: Production Manager
1) Designed, implemented, and produced numerous intelligent air disinfecting systems based on UVC lamps

Kaveh Group Co., Tehran/Saveh, Iran, 1999-2001

1) Position: PLC Programmer

Programming Skills:

MATLAB/SIMULINK

PLC ladder programming

Microcontrollers' C and Assembly language

Visual Basic programming

Protel (for printed circuit board design)

Microcontroller Programming Skills:

PIC, AVR, and 8051 microcontroller series

C2000 digital signal processors (DSPs)

ARM Cortex-A8 processor by Texas Instruments

Publications:

Book Chapters:

[1] H. Zargarzadeh, Q. Yang, S. Jagannathan, "Online Optimal Control of Nonaffine Nonlinear Discrete-Time Systems without Using Value and Policy Iterations," in *Reinforcement Learning and Approximate Dynamic Programming for Feedback Control*, IEEE Press, 2012.

[2] D. Nodland, H. Zargarzadeh, A. Gosh, and S. Jagannathan, "Neural Network-Based Optimal Control of an Unmanned Helicopter," in *Advanced Intelligent and Autonomous Aerospace* Systems, AIAA, 2013.

Six 6 Most Recent Peer Reviewed Journal Papers:

[3] Ramezani, Zahra, Mohammad Mehdi Arefi, Hassan Zargarzadeh, and Mohammad Reza Jahed-Motlagh. "Neuro observer-based control of pure feedback MIMO systems with unknown control direction." *IET Control Theory & Applications* (2016).