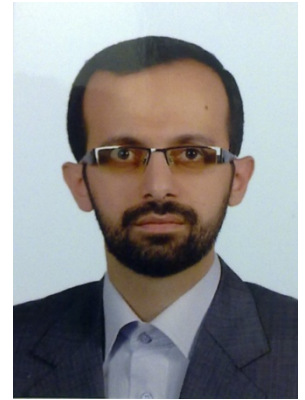


Bahram Tarvirdizadeh

Assistant Professor, University of Tehran



Field of Research

1. Dynamics, Control, Mechatronics and Robotics.
2. Modelling and Control of Linear and Nonlinear Dynamical Systems.
3. Design and Experimental Implementation of Dynamical Systems.
4. Linear and Nonlinear System Identification.
5. PIC & dsPIC MCU, ARM MCU, DSP (TI), FPGA, Boards based Control Systems (Professional).

Address

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Education

Ph.D. 2006- 2012

Faculty of Mechanical Engineering, University of Tehran, Tehran, Iran.

Thesis: "Control of Dynamic Object Manipulation by a Flexible Arm".

M. Sc. 2004- 2006

Faculty of Mechanical Engineering, University of Tehran, Tehran, Iran.

Thesis: "Stability Control of Micro Aerial Vehicles".

B. Sc. 2000- 2004

Faculty of Mechanical Engineering, Khajeh Nasir ad-Din Toosi (K.N.T.) University of Technology, Tehran, Iran.

Thesis: "Automation of Clutch System in Vehicles with Manual Transmission by Fuzzy Control".

Publications (Selected Journal and Conference Papers)

1. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, "Dynamic Object Manipulation by a Flexible Robotic Arm: Theory and Experiment," *International Journal of Robotic and Automation*, 2012, Issue 3, pp. 263-275.
2. Esmail Khanmirza, Aghil Yousefi-Koma, Bahram Tarvirdizadeh, "Nonlinear Trajectory control of a Flapping-Wing Micro Aerial Vehicle" *Aircraft Engineering and Aerospace Technology*, Vol. 84, Issue 1, pp. 58-65(Published).
3. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, "Development and Convergence Approve of a Robust Nonlinear Sliding Mode Observer for General Form of Nonlinear Systems," 19th Annual Conference on Mechanical Engineering-ISME 2011, 10-12 May, 2011, The University of Birjand, Birjand, Iran (Published).
4. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, "Modeling and Dynamical Analysis of a Flexible Arm and an Object Interaction in Impact", The 17th Annual International Conference of Mechanical Engineering, ISME 2009, Tehran, Iran (Published).
5. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, "Modeling and Dynamical Analysis of a Flexible Arm and an Object Interaction in Capture Phase", The 16th Annual International Conference Of Mechanical Engineering, ISME 2008, Kerman, Iran (Published).
6. Esmail Khanmirza, Aghil Yousefi-Koma, Bahram Tarvirdizadeh, "Reachability Analysis of hybrid Dynamical Systems," 19th Annual Conference on Mechanical Engineering-ISME 2011, 10-12 May, 2011, The University of Birjand, Birjand, Iran (Published).
7. Esmail Khanmirza, Aghil Yousefi-Koma, Bahram Tarvirdizadeh, "Integrated Controller Design for Hybrid Dynamical Systems", The 17th Annual International Conference Of Mechanical Engineering, ISME 2009, University of Tehran, Tehran, Iran (Published).
8. Esmail Khanmirza, Aghil Yousefi-Koma, Bahram Tarvirdizadeh, "Performance Control of Hybrid Dynamical Systems", The 15th Annual International Conference Of Mechanical Engineering, ISME 2008, Kerman, Iran (Published).
9. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, Hessam maleki, "Modelling of a Flapping-Wing Micro Aerial Vehicle" The 13th Annual International Conference Of Mechanical Engineering, ISME 2006, Isfahan, Iran (Published).
10. Esmail Khanmirza, Aghil Yousefi-Koma, Samin Akbari, Bahram Tarvirdizadeh, "Robust Control of a Smart beam with Piezoelectric Actuators", The 13th Annual International Conference Of Mechanical Engineering, ISME 2006, Isfahan, Iran (Published).
11. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, Hessam maleki, "An Analytical Model of a Flapping-Wing Micro Aerial Vehicle", 8th Biennial ASME Conference on Engineering Systems Design and Analysis, Torino, Italy(Accepted).
12. Esmail Khanmirza, Bahram Tarvirdizadeh, Farzad Rajaie Salmasie, " H_{∞} Loop-Shaping and Mixed-Sensitivity Control of Smart Beam with Piezoelectric Actuators", 8th Biennial ASME Conference on Engineering Systems Design and Analysis, Torino, Italy (Accepted).
13. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, Hessam maleki, "A Mathematical Model for a Flapping-Wing Micro Aerial Vehicle", The Eighth IASTED International Conference on Modelling and Simulation, Montreal, Canada (Published).
14. Bahram Tarvirdizadeh, Aghil Yousefi-Koma, Esmail Khanmirza, "Control of a Micro Aerial Vehicle (MAV) with Piezo electric Actuator Systems", Smart Materials and Structures, 12 – 13 October 2006, Toronto, Ontario, Canada (Accepted).
15. Esmail Khanmirza, Aghil Yousefi-Koma, Samin Akbari, Bahram Tarvirdizadeh, "Robust Control of a Smart beam with Piezoelectric Actuators", The Eighth IASTED International Conference on Control and Applications, Montreal, Canada (Accepted).

16. Bahram Tarvirdizadeh, Shahram Azadi, "Simulation of Engine and Power Train Systems in Vehicles", The 12th Annual International Conference Of Mechanical Engineering, ISME 2005, Isfahan, Iran (Published).
17. Bahram Tarvirdizadeh, Shahram Azadi, "Design of Automatic Clutch in Vehicles with Manual Transmission by Fuzzy Control", Automotive Science Magazine pressed in Faculty of Automotive Engineering, Iran Science and Technology University (Accepted).

Research Experience

Design, fabrication and precise position and velocity control of a flexible robotic manipulator.

System Identification of a Smart beam with Piezoelectric Actuators.

Design and fabrication precise driver of a 3-phase electrical motor (with FPGA Chip).

Applied Controller Design with; PIC16F877A, PIC18f452, PIC 18f4550 and dsPIC30F4013 Microcontrollers.

Applied Controller Design with Arm (NXP) Microcontroller.

Applied Controller Design with FPGA Chip (Spartan).

Real-time Robotic System Control by computer and data acquisition card.

Electrical circuit design by Protel DXP.

Electrical circuit design by OrCAD Capture & Cadence.

Engine modeling and Electric Control Unit (ECU) of Engine.

Smart beam modeling and Identification

Automation of Clutch System in Vehicles with Manual Transmission by Fuzzy Control.

Engine Modelling and Vehicle Dynamics.

Research Interest

Dynamics, Vibration and Control

Fuzzy-Control and Nero-Fuzzy Control

Multivariable Control System

Smart Materials

Mechatronics

Nonlinear Vibration

Artificial intelligence and expert systems

Nonlinear optimization

Nonlinear Control

Modeling and simulation of dynamic systems

Automatic control system design

Adaptive, learning and nonlinear control

Prediction Control

Manipulators (Dynamic, Mechanism Design, Dynamic Object Manipulation)

Robotics

Robust Control

Digital Control

System Identification

Optimal and Stochastic Control

Genetic Algorithms

Neural Network

Vehicle System Dynamics

Vehicle System Control

Vehicle Engine Modelling

Honors and Achievements

1. 2nd rank in ISME 2007 (The 14th Annual International Conference Of Mechanical Engineering, Amirkabir University of Technology, Tehran, Iran) Competitions for design and fabrication of a "Flapping Wing Aerial Vehicle".
2. 2nd Rank amongst Department grade Students in solid mechanics – University of Tehran
3. 2nd Rank amongst Department grade Students in solid mechanics – University of Tehran
4. 2nd Rank amongst Department Alumni – Faculty of Mechanical Engineering, K.N.T. University of Technology, Tehran, Iran
5. 2nd Rank amongst Department Students – Faculty of Mechanical Engineering, K.N.T. University of Technology, Tehran, Iran

Selected Technical Reports

B. Tarvirdizadeh, A. Yousefi-Koma, E. Khanmirza, “Dynamical Modeling and Control of Hybrid Systems,” Faculty of Mechanical Engineering, University of Tehran.

B. Tarvirdizadeh, B. Najjar Arabi “Experimental System Identification of Al. Beam with piezoelectric Actuators”, Institute of Electronics and Computer Science, University of Tehran.

B. Tarvirdizadeh, M. Mahjoub Jahromi “Control of Al. Beam with piezoelectric Actuators”, Mechanical Engineering Faculty, University of Tehran.

March 2006 B. Tarvirdizadeh, M. Nili, “Modelling of a Manipulator and Control by Hybrid Force-Motion Control Method”, Institute of Electronics and Computer Science, University of Tehran.

B. Tarvirdizadeh, F.R. Salmasie, “Control of Automatic Transmission by Fuzzy Controller”, Institute of Electronics and Computer Science, University of Tehran.

A. Yousefi-Koma, E. Khanmirza, B. Tarvirdizadeh, “The Application of Smart Structures in Morphing Structures”, Technology Co., Tehran, Iran, Technical Report.

A. Yousefi-Koma, E. Khanmirza, B. Tarvirdizadeh, “The Application of Smart Structures in Unmanned Aerial Vehicles”, Technology Co., Tehran, Iran, Technical Report.

Computer Skills

Engineering Softwares: Extensive experience in MATLAB, SIMULINK, ANSYS, Mechanical Desktop, Protel DXP, ModelSim, ISE, MikroC, Keil, OrCAD Capture, Cadence, CCS.

Programming Languages: C

Operating Systems: Windows, Linux