



**Dr. Montazeri-Gh, Morteza**  
**Associate Professor**

**University Degrees**

- PHD, Cranfield University, U.K.
- MSC, Sharif University of Technology.
- BSC, Iran University of Science and Technology.

**Fields of Interest**

- System dynamics, simulation and control
- Simulation and control of vehicle dynamic performance
- Simulation and control of aircraft gas turbine engine performance

**Experiences**

- Director of Systems Simulation and Control Laboratory (1996-present)
- Sabbatical Visit, Chalmers University of Technology, Sweden (2004-2005)
- Scientific Consultant, Engine Research Center, IACI
- Graduate Dean, IUST (1996-1997)
- Associate Dean in Educational Affairs and Postgraduate courses, Department of Mechanical Engineering, IUST (1996-2000)
- Associate Dean in Educational Affairs, Department of Mechanical Engineering, IUST (1988-1992)

**Current Research**

- Simulation of integrated control of powertrain and suspension systems
- Development of driving cycles for city of Tehran
- Hybrid Electric Vehicle (HEV) simulation and control
- Development and evaluation of heavy duty engine test cycle
- Gas Turbine (GT) performance simulation and control

**Funded Research Projects**

- Application of Genetic Algorithm for HEV Fuzzy Controller Tuning (2006)
- Application of the Fuzzy-Logic in the Design of HEV Control Strategy (2005)
- Development of minibuss and bus driving cycle for city of Tehran (collaboration with AVL-MTC) (2004-2005)
- Simulation of full car modeling for study of the active and semi-active suspension (2004)
- Development of car driving cycle for city of Tehran (2003-2004)
- Design of the first GT engine (2003)
- HEV performance analysis (2003)
- Application of fuzzy control for active suspension systems (2002)

- Investigation of the effects of hybridization on the dynamic performance of the hybrid electric minibus steering, suspension and braking systems (2002)
- Simulation of hybrid electric vehicle for design of a prototype hybrid electric minibus (2001)
- Modeling and simulation of GT fuel control system (2001)
- Sensor placement for axial compressor active surge control of axial compressor (1998)
- Vibration analysis of Nissan patrol vehicle (1988)
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- Graduate Theses Supervised
- Jafari, Soheil (PhD)
- Soleimani, Mehdi, (PhD)
- Ahmadi, Amir (MSC), 2007
- Asadi Tabrizi, (MSC), 2007
- Arefian, (MSC), 2006
- Jazayeri, Yaser, (MSC), 2006
- Safari, Amir, (MSC), 2006
- Naghizadeh, Mojtaba, "Driving Cycle Development for Simulation of vehicle Fuel Consumption" (MSC), 2006
- Haji-Soleimani, Mohsen, (MSC), 2006
- Yousefi, Ali, (MSC), 2006
- Poursamad, Amir, (MSC), 2005
- Ghalichi, Babak, " Application of Fuzzy Logic in the Design of HEV Control Strategy", (MSc), 2004
- Varasteh, Hirbod, " Simulation of the Effect of Driving Cycle on the Fuel Consumption" (MSC), 2004
- Bagherinegad, " Manufacturing of Electro-Hydraulic Fuel Control Valve", (MSc), 2004
- Gharaei, Ehsan, "GT Engine Performance matching", (MSC), 2004
- Hamzehpoor, " Simulation and Modeling of GT Electro-hydraulic Fuel Control System", (MSc), 2003
- Moosavi, " ADAMS Full Car Modeling for Investigation of Semi-Active Suspension", (MSC), 2003
- Safarabadi, " Application of Fuzzy Logic in the Design of GT Fuel Control System", (MSc), 2003
- Behzadi, " Application of Fuzzy Logic in Car Active Suspension System", (MSc), 2002
- Agharazi, " Analysis of Mahsan Minibus Braking and Steering Systems", (MSc), 2002
- Rostami, " Dynamic Performance Analysis of Braking, Steering, and Suspension Systems for Hybridization of Mahsan Minibus", (MSc), 2002
- Hasani, Majid, " Control Strategy Design for Hybrid Electric Vehicle", (MSc), 2002
- Nasiri, " Design and Analysis of a Turbofan Engine Thermodynamic Cycle for Engine Selection of Training Aircraft", (MSc), 2001
- Nazari, Alireza, " Study of Control Valves for Throttling of Turbojet Engine Fuel Control System", (MSc), 2001
- Biravand, Bahman, " Modeling of Hybrid Electric Vehicles", (MSc), 2001
- Mojallal, Seifoallah, " Design of a Throttling Controller for Turbojet Engine Fuel Control System", (MSc), 2001
- Hojjati Najaf Abadi, Ali Akbar, " Comparison of PC and PLC in the Control of Pneumatic Systems", (MSc), 2000
- Khoshmaram, Effat, " CAD/CAM Based Manufacturing Process for Compressor Blades", (MSc), 2000
- Sanadgol, Dorsa, " Sensor Placement for Active Suppression of Compressor Instabilities", (MSc), 2000

- Kashani Azad, Mehdi, " Application of Fuzzy Logic in the Semi-Active Suspension System", (MSc), 2000
- Rasooli, Mohammad, " Modeling and Simulation of Vehicle Dynamic Performance", (MSc), 1999
- Feiz, Majid, " Simulation of Turbojet Engine Fuel Control System", (MSc), 1999
- Marvi, Hadi, " Turbojet Engine Performance Analysis Using Stage by Stage Compressor Characteristics", (MSc), 1999
- Salami, Reza, " Application of PLC in the Control of Pneumatic Systems", (MSc), 1998
- Elhani, Babak, " Software Development for Modeling of Turbojet Engine Transient Behavior", (MSc), 1998
- Saedi, Pooya, " Modeling of Flow Instabilities in Axial Compressors", (MSc), 1998

### **Publications - Journal Papers**

- Montazeri-Gh M. and M. Naghizadeh (2007); "Development of Car Driving Cycle for City of Tehran" International Journal of Environment and Pollution, IJEP 2007
- Montazeri-Gh M. and A. Poursamad; "Application of Genetic Algorithm for Simultaneous Optimization of HEV Component Sizing and Control Strategy", International Journal Of Alternative Propulsion, 2006
- Montazeri-Gh M., H. Varasteh and M. Naghizadeh(2006); "Driving Cycle Simulation For Heavy Duty Engine Emission Evaluation and Testing" SAE 2005 Transaction of Journal of Fuels and Lubricants
- Montazeri-Gh M., A. Poursamad and B. Ghalichi (2006); "Application of GA for Optimization of Parallel HEV Control Strategy" Journal of The Franklin Institute 343 (2006) 420-435
- Montazeri-Gh, M. and Kashani Azad, M. (2003); "Comparison between Performance of Fuzzy Based and Optimal Control of Active Suspension Systems", International Journal of Engineering Science, IUST
- Montazeri-Gh M. and D. Sanadgol (2002); "Sensor Placement For Active Control Of Surge In Multi-Stage Axial Compressors" International Journal of Science and Engineering, IUST
- Montazeri-Gh, M. and D. Sanadgol (2000); "Application Of Eigenvalue Analysis For Compressor Surge Prediction", International Journal of Science and Engineering, Spring 2004

### **Publications - Conference Proceedings**

- Montazeri-Gh and M. Asadi (2006), "Influence of the Road Grade on the Optimization of Fuzzy-Based Hybrid Electric Vehicle Control Strategy", SAE 2006-01-3293
- Poursamad A. and M. Montazeri-Gh. (2006); "Powerflow Management in Hybrid Electric Vehicles Using Genetic-Fuzzy Control System" AVEC 2006, Taipei, Taiwan
- Montazeri-Gh M. and M. Soleimani (2006); "Simultaneous Simulation of Hybrid Electric Vehicle Powertrain and Active Suspension Systems for Energy Study" AVEC 2006, Taipei, Taiwan
- Montazeri-Gh M., H. Varasteh and M. Naghizadeh (2005); "Driving Cycle Simulation For Heavy Duty Engine Emission Evaluation and Testing" SAE 2005-1-3796, Powertrain and Fluid Systems Conference and Exhibition, October 2005, San Antonio, Texas, USA
- Montazeri-Gh M. and A. Poursamad (2005); "Optimization Of Component Sizes In Parallel Hybrid Electric Vehicles Via Genetic Algorithms" ASME 2005, International Mechanical Engineering Congress & Exposition, Orlando, USA
- Montazeri-Gh M., A. Poursamad and B. Ghalichi (2005); "Application of GA for Optimization of Parallel HEV Control Strategy" Proceedings of the ICMSAO 2005, February 2005, Sharjah, UEA
- B. Ghalichi, M. Montazeri-Gh and A. Poursamad (2005); "Fuzzy-based Parallel HEV" Proceedings of the ICMSAO 2005, February 2005, Sharjah, UEA

- Montazeri-Gh M. and A. Poursamad (2005); "Application of GA for Optimization of the HEV Sizing" ISME 2005, May 2005, Isfahan, Iran
- Montazeri-Gh M. and B. Ghalichi (2004); "Fuel Conservation Optimization in HEV", Proceedings of the First Conference on Fuel Conservation in Transportation, October 2004, Tehran
- Montazeri-Gh M. and M. Naghizadeh (2004); "Development of the First Tehran Urban Cycle (TEH\_CAR)" Proceedings of the First Conference on Fuel Conservation in Transportation, October 2004, Tehran
- Montazeri-Gh M. and M. Safarabadi-F (2004); "Application of Fuzzy Logic in the Design of Turbojet Engine Fuel Control System, 5th Iranian Conference in Fuzzy Systems, September 2004
- Montazeri-Gh M... et. al. (2004); "Comparative analysis between 7DOF model and Car Full Model simulated in ADAMS" , ISME2004, Tehran
- Montazeri-Gh M. and M. Safarabadi-F (2004); "Fuzzy-Based Gas Turbine Fuel Control System", CDIC04, August 2004, China
- Montazeri-Gh, M. and Hamzehpoor, T. (2004); "Effects of Electro-Hydraulic Fuel Control System on the Turbojet Engine Performance" 5th Iranian Aerospace Conference (AERO 2004), Isfahan, January 2004
- Montazeri-Gh, M. and Hasani, M. (2003); "Parallel Hybrid Electric Vehicle Control Strategy Design Using Fuzzy Logic" Proceedings of 11th International ISME Conference, PP. 1852-1861, Mashhad, Iran, June 2003
- Montazeri-Gh, M., Kazemi and Behzadi (2003); "Modeling and Simulation of the Effect of IZY on the Fuzzy-Based Active Suspension System" Proceedings of 11th International ISME Conference, PP. 1965-1972, Mashhad, Iran, June 2003
- Montazeri-Gh, M., Rostami, Agharazi (2003); "Mahsan Brake System Analysis for Hybridization" Proceedings of 11th International ISME Conference, PP. 187-194, Mashhad, Iran, June 2003
- Montazeri-Gh, M., Hasani, M. (2003); "Hybrid Electric Vehicle Control from Mechatronics Viewpoint" First Iranian Mechatronics Engineering Conference, June 2003, Ghazvin
- Montazeri-Gh, M. and Biravand, B. (2003); "Hybrid Electric Vehicle Components Sizing" First Iranian Mechatronics Engineering Conference, June 2003, Ghazvin
- Montazeri-Gh, M. and Hamzehpoor, T. (2003); "Simulation of Turbojet Electro-Hydraulic Fuel Control System for Sensitivity Analysis of Parts Manufacturing" Sixth Manufacturing Engineering Conference, December 2003, Tehran
- Montazeri-Gh M. and M. Naghizadeh (2003); "Development of Car Drive Cycle for Simulation of Emissions and Fuel Economy", ESS2003, Delft, Netherlands, October 2003
- Montazeri-Gh M. and M. Kashani-Azad (2002); "Energy Regeneration of Active Suspension System in Hybrid Electric Vehicle" AVEC 2002, Japan, September 2002
- Montazeri-Gh M. and S. Mojallaj-A (2002); "Modeling and Simulation of Gas Turbine Performance", MESM2002, Sharje, September 2002
- Montazeri-Gh, M., M. Soleymani, and H. Rahrovan (2002); "Vehicle Ride Evaluation Using Combined Body Motions" Proceedings of 10th ISME International Conference, June 2002, Tehran
- Montazeri-Gh, M. and Kazemkhani A. (2002); "Simulation of Minibus Performance for Hybridization", Proceedings of 10th ISME International Conference, June 2002, Tehran
- Montazeri-Gh, M. and Biravand, B. (2002); "Parallel HEV Control Strategy", Proceedings of 10th ISME International Conference, June 2002, Tehran
- Montazeri-Gh, M. and S. Mojallaj-A. (2002); "Modeling and Simulation of Turbojet Engine Fuel Control System", Proceedings of Aerospace Conference (AERO2002), Tehran

- Montazeri-Gh, M. and A. Nazari (2002); "Electro-Hydraulic System for GT Thrust Throttling" Proceedings of the 5th Manufacturing Engineering Conference, pp. 321-331, February 2002, Tehran
- Montazeri-Gh, M., Hasani, M. (2002); "Hybrid Electric Vehicle Control Strategy Design" ISME Student Conference, 2002
- Montazeri-Gh M. and M. Kashani-Azad (2001); "Simulation of Fuzzy-Based Active Suspension System" ESS 2001, France, October 2001
- M. Kashani Azad, M. Montazeri-Gh (2001); "Active and Passive Car Suspension Systems", Iran Society of Mechanical Engineers Magazine, Spring
- M. Montazeri-Gh and M. Kashani Azad (2001); "Fuzzy Control of Intelligent Suspension Systems", 9th ISME National Conference, Gilan University, Iran
- M. Montazeri-Gh and M. Kashani Azad (2001); "Application of Active Suspension Systems in the Hybrid Electric Vehicles", Proceedings of the First Symposium on Hybrid Vehicles, August 2003, IUST, Tehran
- M. Montazeri-Gh and A. Kazemkhani (2001); "Hybrid Electric Vehicle Performance", Proceedings of the First Symposium on Hybrid Vehicles, August 2003, IUST, Tehran
- Montazeri-Gh. M. and M. Feiz (2000); " Turbojet Control System Simulation"; The 4th International ISME Conference, Sharif University Of Technology, Tehran, April 2000
- Montazeri-Gh. M. and M. Rasouli (2000); "Modelling and Simulation of Vehicle Dynamic Performance" The 4th International ISME Conference, Sharif University Of Technology, Tehran, April 2000
- Montazeri-Gh, M. and D. Sanadgol (2000); "Application Of Eigenvalue Analysis For Compressor Surge Prediction", International Conference in Applied Mathematics (ICAM) 2000, Tehran
- Montazeri-Gh. M. and D. Sanadgol (2000); "Sensor Placement For Active Control Of Surge In Multi-Stage Axial Compressors" AERO 2000, Sharif University of Technology, Tehran, Iran
- Sedighi, Montazeri-Gh, and Khoshmaram (2000); "Application of CAD/CAM in the design and manufacturing of Axial Compressor Blades", Proceedings of AERO 2000, Sharif University of Technology, Tehran, Iran
- Montazeri-Gh. M. and P. Saedi (1999); "The effect of Compressor Extra Chamber on the Surge Inception" Proceeding of the 7th Annual ISME Conference, Zahedan, April, 1999
- Montazeri-Gh. M. and B. Elhami (1999); "Simulation of Turbojet Transient Performance"; Proceeding of the 7th Annual ISME Conference, Zahedan, April, 1999
- Rahmani A and M. Montazeri-Gh. (1999); "Application of Fuzzy Logic in Active Suspension System" Proceeding of the 7th Annual ISME Conference, Zahedan, April, 1999
- Montazeri-Gh. M. (1998); "The Effects Of Actuator Characteristics On Active Control Of Surge", Proceeding of the 3th International ISME Conference, Tehran, 1998
- Montazeri-Gh. M. (1998); "Actuator failure investigation for Active Control Of Surge" Proceeding of the Second Iranian Conference on Aerospace Engineering, Isfahan, 1998
- Montazeri-Gh. M., D. J. Allerton and E.L. Elder(1996); "Actuatore placement for the active control of surge in a multi-stage axial compressor", Turbo Expo ASME-96, Birmingham, UK, June 1996
- Montazeri-Gh. M., D.J.Allerton and E.L.Elder(1996); "Active control of surge in An Aircraft compressor", UKACC International Conference on CONTROL 96, Exeter, UK, 1996
- Montazeri-Gh. M., D. J. Allerton and E. L. Elder(1994); "Simulation of nonlinear one-dimensional modeling for surge prediction with the application of active surge control", ESS94, European Simulation Symposium, October 1994, Vol 2, pp.191-195

## **Research Laboratory**

- Systems Simulation and Control Laboratory
- MSc Seminar and Thesis

## **Courses Taught**

- Advanced Hydraulic and Pneumatic (Graduate)
- Analog Control (Graduate)
- Automatic Control
- Chassis Systems Design
- System Dynamics (Graduate)
- Vehicle Dynamics (Graduate)