Mohammad Javad Esfandyari

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EDUCATION

- **PhD Candidate - Mechanical Engineering**
  University of Tehran, Tehran, Iran
  Sep. 2014 – present
  Current GPA: 3.4/4

- **MSc Mechanical Engineering**
  University of Tehran, Tehran, Iran
  Sep. 2011 – Jan. 2014
  GPA: 3.5/4

- **BSc Mechanical Engineering**
  Shahid Bahonar University of Kerman, Kerman, Iran
  Sep. 2007 – Aug. 2011
  GPA: 3.4/4

PUBLICATIONS

- Patent:
  - M. J. Esfandyari, H. Nehzati, M. Esfahanian, V. Esfahanian, A. Salehi, "Hardware-in-the-Loop (HiL) Simulator for testing the central control unit in a series hybrid electric bus," Iran Patent No. 84096, October 2014.

- Peer-Reviewed Journal Papers:
  - M. J. Esfandyari, M. Esfahanian, M. R. Hairi Yazdi, V. Esfahanian, H. Nehzati, and A. Salehi, "Hardware-in-the-Loop Simulation for Verification of the Drive Motor Management Software in a Series Hybrid Electric Bus," *International Journal of Powertrains*, **Accepted**.
  - M. J. Esfandyari, V. Esfahanian, M. R. Hairi Yazdi, H. Nehzati, and A. Salehi, "Design and Implementation of a Model-in-the-Loop Simulator for Verification of the Vehicle Control Software in a Series Hybrid Electric Bus," *Modares Mech. Eng.*, vol. 14, no. 12, 2015 (in persion).
  - M. J. Esfandyari, M. R. Hairi Yazdi, V. Esfahanian, and H. Nehzati, "Design of a Real-time Simulator of the Engine-Generator for a Series Hybrid Electric Bus," *Modares Mech. Eng.*, vol. 14, no. 4, pp. 200–206, 2014 (in persion).
  - M. Masih-Tehrani, V. Esfahanian, M. Esfahanian, H. Nehzati, and M. J. Esfandyari, "Hybrid energy storage optimal sizing for an e-bike," *Int. J. Automot. Eng.*, vol. 5, no. 2, pp. 1016–1025, 2015.
  - M. Roozegar, M. J. Mahjoob, M. J. Esfandyari, and M. S. Panahi, "XCS-based reinforcement learning algorithm for motion planning of a spherical mobile robot," *Appl. Intell.*, pp. 1–11, 2016.

- Refereed Conference Papers:
  - M. J. Esfandyari, V. Esfahanian, M. R. Hairi Yazdi, H. Nehzati, and M. Ayati, "Enhanced Performance of the Battery System in Hybrid Electric Vehicle Using Fuzzy Logic-Based Control of the Charge/Discharge Rate," *The 10th International Conference on Lead-Acid Batteries - LABAT 2017*, **Accepted**.

- H. Nehzati, M. Safarabadi, M. Esfahanian, M. J. Esfandyari, Z. Pourbafarani, "Design of a Comprehensive Battery Pack Simulator for Hardware-in-the-Loop Testing of the Hybrid Electric Vehicle Control Unit," *The 10th International Conference on Lead-Acid Batteries - LABAT 2017*, **Accepted**.
- V. Esfahanian, M. J. Esfandyari, M. R. Hairi Yazdi, and H. Nehzati, "Design and Implementation of A Real-time Simulator for Hardware-in-the-Loop Testing of A Hybrid Electric Bus Central Control Unit," in *FISITA World Automotive Congress*, 2014.
- M. J. Esfandyari, M. Esfahanian, M. R. Hairi Yazdi, V. Esfahanian, H. Nehzati, and A. Salehi, "Hardware-in-the-Loop Simulation for Verification of the Drive Motor Management Software in a Series Hybrid Electric Bus," *in 2nd Biennual Int. Conf. on Powertrain Modelling and Control*, 2014.
- H. Nehzati, M. R. Hairi Yazdi, V. Esfahanian, A. Salehi, and M. J. Esfandyari, "Hybrid Central Control Unit Software Development for Series Hybrid Electric Vehicles", *The 9th International Conference on Internal Combustion Engines & Oil*, 2016.
- M. J. Esfandyari, M. Roozegar, M. Shariat Panahi, and M. Mahjoob, "Motion Planning of A Spherical Robot Using Extended Classifier Systems," in *Electrical Engineering (ICEE), 2013 21st Iranian Conference on*, 2013.

RESEARCH INTEREST

- Battery Management Systems (BMS) Software Development
- Battery State Estimation
- Battery Closed-Loop Charge/Discharge Rate Control
- Hardware-in-the-Loop (HiL) Simulation
- Electric And Hybrid Electric Vehicle Control Unit Development
- Control of Dynamic Systems

RESEARCH EXPERIENCE

Vehicle, Fuel and Environment Research Institute (VFERI) **Tehran, Iran**
Research Assistant Sep. 2011 – present

- Software development for a full functional Battery Management System (BMS).
- Design and implementation of a Hardware-in-the-Loop (HiL) Simulation test bench for evaluation of the vehicle control unit in a series hybrid electric city bus.
- Functional testing and development of lithium-ion battery packs for EVs and HEVs.

University of Tehran **Tehran, Iran**
M.A. student Sep. 2011 – present

- Design of a thermal model for a battery pack using system identification techniques.
- Control of the engine vibrations during start/stop in a mild hybrid vehicle using fuzzy control methods.
- Motion planning of a spherical mobile robot using reinforcement learning methods.
- Vibration control of a beam using piezoelectric material and optimal control techniques.

TEACHING EXPERIENCE

University of Tehran **Tehran, Iran**
Teacher Assistant Sep. 2013 – Jan. 2014

- Assisting the instructor with creating supplementary notes and presentations for lectures, classroom instruction, exams, home works, and record keeping.

COMPUTER SKILLS

- Engineering: MATLAB, LabVIEW, ANSYS
- Programming: MATLAB
- Others: Word, Excel, PowerPoint

LANGUAGE

- English: **Good**,
  - MCHE (MSRT) Score: 79/100 (Reading: 31/40, Listening: 18/30, Grammar: 30/30**)**
  - Completed educational program at Iran Language Institute (ILI)

REFRENCES

- Vahid Esfahanian, Professor, School of Mechanical Engineering, College of Engineering, University of Tehran, E-mail: evahid@ut.ac.ir.
- Mohammad Reza Hairi Yazdi, Professor, School of Mechanical Engineering, College of Engineering, University of Tehran, E-mail: myazdi@ut.ac.ir.
- Mohsen Esfahanian, Associate Professor, Department of Mechanical Engineering, Isfahan University of Technology, E-mail: mesf1964@cc.iut.ac.ir.