

# Curriculum Vitae

## Dr. Hamed Kouhi



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## Education

- **BS** in Mechanical Engineering (2008), University of Guilan, Iran
  - **MS** Applied Mechanics (2010), Sharif University of Technology, Iran
  - **PhD** Applied Mechanics (2017), Amirkabir University of Technology, Iran
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## Research Areas

- Model Predictive Control
  - Autonomous Vehicles Control
  - Multi Agent Systems
  - Navigation (EKF, UKF, INS, AHRS, ...)
  - System Identification
  - Dynamics
  - Spacecraft Attitude Dynamics and Control
  - Semi Active Suspension System
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## Journal articles

- Kouhi H, Moradi A. Multiple-Vehicle Cooperative Autonomous Parking Trajectory Planning Using Connected Fifth Degree Polynomials and Genetic Algorithm Optimization. IEEE Transactions on Intelligent Vehicles. 2024 Feb 13.

- Kouhi H, Ghalami M, Norouzzadeh A, Ahmadi A. Transfer Function-Based Road Classification for Vehicles with Nonlinear Semi-Active Suspension. *World Electric Vehicle Journal*. 2024 Apr 1;15(4):143.
- Kouhia H, Salahshoorb E. Leader Following and Multiple Obstacle Avoidance of Autonomous Vehicle with Steering-Wheel and Driving-Wheel Torques Using Path Planning and Model Predictive Control, *Amirkabir Journal of Mechanical Engineering*
- Kouhi H. Attitude Control of a Spacecraft during an Orbital Maneuver for Fast Rejecting of the Large Disturbance Torque without Using the Reaction Control System. *Scientia Iranica*. 2022 Apr 1;29(2):597-611.
- Kouhi, H., Ansari, R., Salahshoor, E., Miripour Fard, B. (2021). 'A Comparison Between the Linear and Nonlinear Dynamic Vibration Absorber for a Timoshenko Beam', *Journal of Solid Mechanics*, (), pp. -. doi: 10.22034/jsm.2020.1905148.1625.
- Kabganian M, Kouhi H, Shahravi M, Saberi FF. Thrusting maneuver control of a small spacecraft via only gimbaled-thruster scheme. *Advances in Space Research*. 2018 May 1;61(9):2328-43.
- Saberi FF, Kabganian M, Kouhi H, Shahravi M. Gimbaled-thruster based nonlinear attitude control of a small spacecraft during thrusting manoeuvre. *The Aeronautical Journal*. 2017 Jul;121(1241):983-1004.
- Kouhi H, Kabganian M, Fani Saberi F, Shahravi M. Adaptive control of a spin-stabilized spacecraft using two reaction wheels and a 1DoF gimbaled-thruster. *AUT Journal of Modeling and Simulation*. 2017 Jun 1;49(1):103-12.
- Kouhi H, Kabganian M, Shahravi M, Fani Saberi F. Retrofiring control method via combination of a 1DoF gimbaled thrust vector control and spin-stabilization. *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering*. 2017 Jun;231(7):1199-212.
- Kouhi H, Kabganian M, Saberi FF, Shahravi M. Robust control of a spin-stabilized spacecraft via a 1DoF gimbaled-thruster and two reaction wheels. *ISA transactions*. 2017 Jan 1;66:310-24.
- Sayyaadi H, Kouhi H, Salarieh H. Control of car-like (wheeled) multi robots for following and hunting a moving target. *Scientia Iranica*. 2011 Aug 1;18(4):950-65.
- Etemadi, S., H. Kouhi, A. ALASTI, and GR VOSOUGHI. "Variable Structure Behavioural Controller for Multi-agent Systems." (2009): 49-65.

## Conference articles

- Kouhi, Hamed and Kabganian, Mansour and Fani Saberi, Farhad and Ghorbani, Fatemeh, 2021/3, "Gimbal Actuator Modeling for a Spin-Stabilized Spacecraft Equipped with a 1DoF Gimbaled-Thruster and two Reaction Wheels", 5th National Conference on Application of Novel Technologies in Engineering Sciences, Torbat Heydarieh,, <https://civilica.com/doc/1202737>
- Etemadi S, Kouhi H, Alasty A, Vossoughi GR. Coordination of a group of autonomous agents with limited field of view through variable structure control method, ICROS-SICE International Joint Conference, Fukuoka, Japan, 2009 Aug:1074-9.

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## Teaching

PhD and MS courses:

- Model Predictive Control
- Advanced Control
- System Identification
- Path planning and control of wheeled robots (for the students of the Guilan and Luebeck University )
- Seminar

BS courses:

- Automatic Control
- Dynamics
- Numerical Calculation
- Static

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## **Experience**

- Design a road classification algorithm for using in a semi-active suspension system, Faravari Sakht Company, Iran
- Research on the control algorithm and fault detection logic of the internal combustion engine, Mega Motor Saypa, Iran
- Member of Sharif Satellite group in the field of satellite Dynamics and Control
- Design an Inertial Navigation System (INS) system for a car

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## **Grant Awarded**

- DAAD: German Academic Exchange Service,

Intended purpose:

The grant will be used to carry out the project entitled “Alliance for international Research and Education of Intelligent Systems (AIREIS)” in the Hochschuldialog funding program with the Islamic world.

Funder:

The German Academic Exchange Service (DAAD) Kennedyallee 50, 53175, Bonn, Germany.

Amount of grant:

The grantor grants the grantee funds from the Federal Foreign Office (AA) a non-repayable grant for project funding in the amount of up to 89,982.00 euros. The grant is granted as full funding.

Approval Period:

The approved grant is available to the grantee in the period from January 1<sup>st</sup>, 2022 to December 31<sup>st</sup>, 2022.