Siavash Sabzy

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ResearchGate
Github

Curriculum Vitae

Research Interests

Astrodynamics
Three-Body Problem
Guidance, Navigation and Control (GNC)
Machine Learning

Education

- **Master of Science** — **Satellite Technology Engineering**
  Iran University of Science and Technology, Tehran, IR — **Sep. 2017 - Jan. 2020**
  Thesis: "Coupled Orbit and Attitude Dynamics of a Spacecraft in the Ecliptic Restricted Three Body Problem"

- **Bachelor of Science** — **Mechanical Engineering**
  Shahid Rajaee University, Tehran, IR — **Jan. 2013 - Jan. 2017**
  Thesis: "Vibration Analysis of a Rotary Shaft with Rigid or Flexible Bearings by Considering the Rotor Gyroscopic Effects"

- **High School** — **Mathematics and physics**
  Alameh Tabatabaei High School — **Sep. 2007 - June. 2010**
  Aleshtar, Lorestan, Iran

Work Experiences

- **IUST Space Research Center** - Tehran, Iran — **Researcher**, Nov. 2021 - Now
  - Navigation Expert
  - Software Developer
  - Geodesy Expert
- **Ministry of Education, Lorestan Education Department** - Lorestan, Iran **Teacher**, Feb. 2017 - Nov. 2021
  - Automotive Internal Combustion Engines Workshop
  - Automotive Gasoline Engines Workshop
  - Automotive electrical workshop

Publications

* click on items (in the PDF-File) - to see the details of publications, academic projects and online courses.

Journals:

- **Siavash Sabzy**, Majid Bakhtiari, Elyas Rashno **"Distinguishing Periodic Attitude Motions from Poincaré Sections Using a Compatible Clustering Method"**, Nonlinear Dynamics, Springer.
- **Siavash Sabzy**, Kamran Daneshjou, Majid Bakhtiari **" Periodic attitude motions along planar orbits in the elliptic restricted three-body problem"**, Advances in Space Research, Elsevier.
- Majid Bakhtiari, Ehsan Abbasali, **Siavash Sabzy**, Amirreza Kosari **"Natural Coupled Orbit-Attitude Periodic Motions in the Perturbed-CRTBP including Radiated Primary and Oblate Secondary"**, Astrodynamics journal, Springer.
- Majid Bakhtiari, Amirhossein Panahyazdan, **Siavash Sabzy "Prediction of Earth Orientation Parameters using a hybrid Attention-based CNN-GRU Model with a Coordinate Transformation Approach"**, Journal of aerospace science and technology.

Conferences:

- **Siavash Sabzy**, Bahman Ghorbani Vaghei **"Designing Coupled Attitude and Orbit Control System of GEO Satellite During Orbit Transfer"**, 2018 (DMECONF04). **(in Persian)**
- **Siavash Sabzy**, Majid Bakhtiari, Kamran Daneshjou **"Investigating the Effect of Eccentricity and Mass Ratio of Primaries on the Structure of Lyapunov Orbits"**, The 19th International Conference of Iranian Aerospace Society.
- **Siavash Sabzy**, Meisam Farajollahi **"Dynamical Simulation of MEMS Inertial Sensor for Measuring the Gravity Gradient Torque in Low Earth Orbit"**, The 19th International Conference of Iranian Aerospace Society. **(in Persian)**

Online Courses

- Machine Learning offered by Stanford University
- Reinforcement Learning Specialization offered by University of Alberta
- Spacecraft Dynamics and Control Specialization offered by University of Colorado Boulder

Language Skills

- **English** Fluent
  TOEFL: 104, (R:27, L:30, S:24, W:23)
  - **Appointment Number:** 7574603249657141
  - **Test Date:** March 02, 2024
- **Persian** Native

Programming and Software Skills

Programming Languages
- Matlab
- Python: Numpy, conda-orekit, pyqt5, pymoo, pandas
- Java: JavaFx, orekit

Software
- GMAT: General Mission Analysis Tool
- SPENVIS: Space Environment Information System
- ESA MASTER tool
- ESA DRAMA tool

General Softwares
- Git
- LaTeX
- Microsoft Office

References

- **Dr. Bahman Ghorbani Vaghei**
  School of Railway Engineering, Iran University of Science and Technology, Tehran, Iran
  Email: bahman_gh@iust.ac.ir
  Tel: +98-21-77491029

- **Dr. Meisam farajollahi**
  School of New Technologies, Iran University of Science and Technology, Tehran, Iran
  Email: farajollahi@iust.ac.ir
  Tel: +98-21-73225825