

# Arman Asgharpoor

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## Machine Learning Researcher

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[armanasq.github.io](https://armanasq.github.io) 

### OBJECTIVE

I am a machine learning researcher interested in space, focused on the intersection of AI and estimation theory for deep Space exploration missions at the **University of Tehran Space Lab** and supervised by Dr **M.H. Sabour**. Also, I am a referee of the Research Council at the Students' Scientific Research Center (SSRC), supervised by Professor **P. Pasalar** and a member of the Universal Scientific Education and Research Network (USERN) supervised by Professor **Nima Rezaei**.

### PUBLICATIONS

1. **Asgharpoor, A.**, Nematian, S. & Sabour, M. H. Formation Control Utilizing Receding Horizon Iterative Learning Control. *International Journal of Robust and Nonlinear Control* (Under Review).
2. **Asgharpoor, A.** & Sabour, M. H. Inertial Attitude Estimation based on Neural Fuzzy Complementary Filter. *Journal of Intelligent and Fuzzy Systems* (Drafting).
3. **Asgharpoor, A.** & Sabour, M. H. Neural Network Based Estimation: A Review. *Neural Computing and Applications* (Drafting).

### EDUCATION

#### M.Sc. Space Engineering

- Ranked 1<sup>st</sup> universities in Iran based on UsNews
- GPA: 17.81/20 | Rank: 1<sup>st</sup> in class
- Thesis: An End to End Deep Learning Framework for inertial Attitude Estimation | Supervised by Dr M.H. Sabour
- Award: Full Tuition Fee Waiver

University of Tehran

2019-2022(exp)

#### Healthcare MBA

- Award: Partial Tuition Fee Waiver | GPA: 98.00/100

Academic Center for Education, Culture and Research

2019-2020

#### B. Eng. Avionics

- GPA: 17.60/20

Aviation Industry Training Center

2016-2019

#### A.E.T. Aircraft Avionics

- Award: Full Tuition Fee Waiver

Civil Aviation Technology College

2013-2016

### RESEARCH EXPERIENCE

#### Former of Fuzzy Logic Lab

- Aimed to do research on Multi-Criteria Decision Making 

USERN Interest Group

2020

#### ShadX Team Leader

- Graduate Team Aircraft Design, Aimed to design a Modern Regional Jet Family

AIAA Aircraft Design Competition

2020

#### Referee of Research Council

- Evaluating Research Proposals

Students' Scientific Research Center

2019-Present

#### Design and Fabrication of 3-Axis CNC Milling Machine

- Use Embedded Systems to Control CNC
- Use SolidWorks and Inventor to Design the Structure

Aviation Industry Training Center

2019-2020

#### Design and Implication of Scientific-Exploration CanSat

- Use Raspberry Pi for Computer Vision and Pattern Detection
- Implementing Various Sensor Fusion Techniques for State Estimation(Kalman Filter Family, Complementary Filter, ANNs)

Universiy of Tehran

2019-2020

#### Research Assistance

Supervise undergraduate students working on the research project by:

- Conduct literature reviews, and collect, manage, and analyze data
- Provide ready access to all experimental data for the faculty researcher and/or supervisor
- Acting as liaison/mediator between the undergraduate students and the faculty researcher
- Attend project meetings and seminars or other meetings as necessary

Aviation Industry Training Center

2018-2020

#### Thesis Advisor

- Design and Implementation of A 3 Axis CNC Machine
- Design and Implementation of A CNC Hot Wire
- Design and Implementation of Pulse Circuits Training Board
- Design, Simulate and Build an Aircraft Fire Extinguishing Systems
- Design and Implementation of Retractable Landing Gear

Aviation Industry Training Center

2018-2020

#### Wireless Power Transmission (WPT) for Medical Purpose

- Use ANSYS, ADS, CST, and Altium Designer to Design and Analyse the Circuit

2018-2019

## SKILLS

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<b>Programming Languages</b>	MATLAB   Simulink   Python   C++   ROS   HTML   L <sup>A</sup> T <sub>E</sub> X
<b>Frameworks &amp; Libraries</b>	Matplotlib   Numpy   Pandas   TensorFlow   Keras
<b>CAD-CAM</b>	CATIA   SolidWorks   Inventor   Proteus   Altium Designer   AutoCAD
<b>CAE</b>	CST   ADS   ANSYS Workbench   COMSOL
<b>Soft Skills</b>	Time Management, Punctuality, Extremely Coordinated and Goal-Directed Project Management, Teamwork, Conflict Resolution Multi-Tasking, Flexibility and Adaptation   Problem Solving, Critical Thinking

## LAB EXPERIENCE

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### Space Lab

- Working with 3-DoF Experimental Test-Bed for Integrated Attitude Dynamics and Control
- Using LabView and ARM Development Boards

**University of Tehran**

2019-present

### Fuzzy Logic Lab

- Working on Fuzzy Inference Systems project such as fuzzy tuned complementary filter for IMU based attitude estimation
- **Websites:** University of Tehran Fuzzy Logic Lab  | USERN Fuzzy Logic Lab Interest Group  | ResearchGate 

2019-present

### Avionics Lab

- Working with Aircraft Instrument Panel and different flight instruments (Altimeter, Airspeed Indicator, Heading Indicator, Attitude Indicator, Turn Coordinator, and Vertical Speed Indicator).

**Aviation Industry Training Center**

2018-2020

### Electronics Lab

- Designing and assembling PCBs and working with different electronic measuring and test equipment (Function Generator, Oscilloscope, LCR meter, and etc.)

**Aviation Industry Training Center**

2018-2020

### Aircraft Instruments

- Improve student learning performance by redesigning the lab and inventory management
- Repairing different flight instruments

**Civil Aviation Technology College**

2015-2016

## INTERNSHIPS

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### Avionics @ IranAir, Civil Aviation Technology College, & Aviation Industry Training Center

- Using **Airbus A-320** and **Aero Commander 690** Aircraft Maintenance Manual (**AMM**) and Aircraft Illustrated Parts Catalog (**IPC**) for checking and repairing different parts of aircraft - Engine and Avionics Instruments

## TEACHING EXPERIENCE

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### Instructor

, taught 11 courses to undergrad students including:

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| • <b>Internship Instructor:</b> Avionics Technology (B.Eng.) and Aircraft Maintenance (B.Eng.)                                   | <b>Aviation Industry Training Center</b> | 2019-2020 |
| • <b>Internship Instructor:</b> Avionics Technology (A.E.T) and Aircraft Maintenance (A.E.T)                                     |  | 2018-2020 |
| • <b>Lab Instructor:</b> Electronic 1, Electronic 2, Electronic 3, Electronic Circuits 1, Electronic Circuits 2, Microprocessors |  | 2018-2020 |
| • <b>Lab Instructor:</b> Aircraft Instruments  |  | 2018-2020 |

## WORK EXPERIENCE

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### Martial Arts Instructor

, Black Belt Dan II

- Improve communication skills by teaching students with various background

**Iran martial arts federation**

2015-Present

### Manager

- Improve leadership and management skills by working with different people in harsh work environments

**Arman Imen Passargad**

2013-Present

## EXECUTIVE ACTIVITIES

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### Universal Scientific Education and Research Network

2021

- **6<sup>th</sup>** International USERN Congress & Prize Awarding Festival | Lab Techniques School Executive Team | MTalk Executive Team
- **The Core Member of:** R&D | Publicity | Media | IT

### Tehran University of Medical Sciences

2014-2021

- **4<sup>th</sup>** Student Education Development Festival | **20<sup>th</sup>, 21<sup>st</sup>, 23<sup>rd</sup>** Conference of Annual General Meeting

### University of Tehran

2019-2020

- Former of Cultural Society KARA | Organizer of Climate Change Conference

### World Astronomy Week

2017

- Night Sky Institute

### Civil Aviation Technology College

2012-2015

- Organizer of WaterRocket Competition | Road & Urban Development & The Related Industries Exhibition
- **3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>** International Aviation & Space Industries Exhibition of Iran

## **VOLUNTEER EXPERIENCE**

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### **Executive Member**

2021

- *The 7<sup>th</sup> International Festival of Paintings for Pediatric Patients*, USERN Health And Art

### **Mentor**

2020-Present

- *Space Generation Advisory Council*

### **Pest Control**

2013-Present

- *Kabrizak Nursing Home | Sarai Ehsan Social Victims Center | Vardavard Welfare*

## **MEMBERSHIP & AFFILIATIONS**

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- University of Oxford Responsible Technology Institute Student Network
- Student Chapter of the European Low Gravity Research Association
- Royal Aeronautical Society
- Space Generation Advisory Council
- Astronomers Without Borders

- Space & Satellite Professionals International
- American Physical Society
- Institute of Mathematical Statistics
- Royal Statistical Society
- University of Tehran Chess Club
- Educational Development Center, TUMS

## **CERTIFICATES**

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### **USERN**

Scientific Writing | Submission & Peer Reviewing | Data Analysis in SPSS | Systematic Review | Meta-analysis

### **University of Toronto (Coursera)**

State Estimation and Localization for Self-Driving Cars

### **DeepLearning.AI (Coursera)**

Neural Networks and Deep Learning

### **NSPE**

Bridging the Gap to Leadership

### **MathWorks**

MATLAB Onramp

## **AWARDS & HONORS**

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### **USERN Miniature Talk**

- Appreciated Presenter

2021

### **Iran Martial Arts Federation**

- Gold Medalist
- Silver Medalist
- Bronze Medalist

2011, 2012, 2018, 2019

2015

2016, 2019

### **Nearu Martial Arts**

- Black Belt Dan II

2019

## **HOBBIES**

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Mentoring, Astrophotography, Reading Book, Playing Chess, Going to Gym, Traveling