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Arman Asgharpour

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Machine Learning Researcher

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

EDUCATION

M.Sc. Space Engineering

University of Tehran

- Ranked 1st universities in Iran based on UsNews

2019-2022(exp)

- GPA: 17.81/20 | Rank: 1st 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

Healthcare MBA

Academic Center for Education, Culture and Research)

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

2019-2020

B. Eng. Avionics

Aviation Industry Training Center

- GPA: 17.60/20

2016-2019

A.E.T. Aircraft Avionics

Civil Aviation Technology College


- Award: Full Tuition Fee Waiver

2013-2016

RESEARCH EXPERIENCE

Former of Fuzzy Logic Lab

USERN Interest Group

- Aimed to do research on Multi-Criteria Decision Making 

2020

ShadX Team Leader

AIAA Aircraft Design Competition

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

2020

Referee of Research Council

Students' Scientific Research Center

- Evaluating Research Proposals

2019-Present

Design and Fabrication of 3-Axis CNC Milling Machine

Aviation Industry Training Center

- Use Embedded Systems to Control CNC

2019-2020

- Use SolidWorks and Inventor to Design the Structure

Design and Implication of Scientific-Exploration CanSat

University of Tehran

- Use Raspberry Pi for Computer Vision and Pattern Detection

2019-2020

- Implementing Various Sensor Fusion Techniques for State Estimation(Kalman Filter Family, Complementary Filter, ANNs)

Research Assistance

Aviation Industry Training Center

Supervise undergraduate students working on the research project by:

2018-2020

- 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

Thesis Advisor

Aviation Industry Training Center

- Design and Implementation of A 3 Axis CNC Machine

2018-2020

- 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

Wireless Power Transmission (WPT) for Medical Purpose




2018-2019

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

SKILLS

Programming Languages	MATLAB Simulink Python C++ ROS \LaTeX
Frameworks & Libraries	Matplotlib Numpy Pandas TensorFlow Keras
CAD-CAM	CATIA SolidWorks Inventor Proteus Altium Designer AutoCAD
CAE	CST ADS ANSYS Workbench COMSOL
Soft Skills	Time Management, Punctuality, Extremely Coordinated and Goal-Directed Project Management, Teamwork, Conflict Resolution Multi-Tasking, Flexibility and Adaptation Problem Solving, Critical Thinking

LAB EXPERIENCE

Space Lab	University of Tehran 2019-present
<ul style="list-style-type: none">Working with 3-DoF Experimental Test-Bed for Integrated Attitude Dynamics and ControlUsing LabView and ARM Development Boards	
Fuzzy Logic Lab	2019-present
<ul style="list-style-type: none">Working on Fuzzy Inference Systems project such as fuzzy tuned complementary filter for IMU based attitude estimationWebsites: University of Tehran Fuzzy Logic Lab  USERN Fuzzy Logic Lab Interest Group  ResearchGate 	
Avionics Lab	Aviation Industry Training Center 2018-2020
<ul style="list-style-type: none">Working with Aircraft Instrument Panel and different flight instruments (Altimeter, Airspeed Indicator, Heading Indicator, Attitude Indicator, Turn Coordinator, and Vertical Speed Indicator).	
Electronics Lab	Aviation Industry Training Center 2018-2020
<ul style="list-style-type: none">Designing and assembling PCBs and working with different electronic measuring and test equipment (Function Generator, Oscilloscope, LCR meter, and etc.)	
Aircraft Instruments	Civil Aviation Technology College 2015-2016
<ul style="list-style-type: none">Improve student learning performance by redesigning the lab and inventory managementRepairing different flight instruments	

INTERNSHIPS

Avionics @ IranAir, Civil Aviation Technology College, & Aviation Industry Training Center
<ul style="list-style-type: none">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

Instructor , taught 11 courses to undergrad students including:	Aviation Industry Training Center
<ul style="list-style-type: none">Internship Instructor: Avionics Technology (B.Eng.) and Aircraft Maintenance (B.Eng.)Internship Instructor: Avionics Technology (A.E.T) and Aircraft Maintenance (A.E.T)Lab Instructor: Electronic 1, Electronic 2, Electronic 3, Electronic Circuits 1, Electronic Circuits 2, MicroprocessorsLab Instructor: Aircraft Instruments	2019-2020 2018-2020 2018-2020 2018-2020

WORK EXPERIENCE

Martial Arts Instructor , Black Belt Dan II	Iran martial arts federation 2015-Present
<ul style="list-style-type: none">Improve communication skills by teaching students with various background	
Manager	Arman Imen Passargad 2013-Present
<ul style="list-style-type: none">Improve leadership and management skills by working with different people in harsh work environments	

EXECUTIVE ACTIVITIES

Universal Scientific Education and Research Network	2021
<ul style="list-style-type: none">6th International USERN Congress & Prize Awarding Festival Lab Techniques School Executive Team MTalk Executive TeamThe Core Member of: R&D Publicity Media IT	
Tehran University of Medical Sciences	2014-2021
<ul style="list-style-type: none">4th Student Education Development Festival 20th, 21st, 23rd Conference of Annual General Meeting	
University of Tehran	2019-2020
<ul style="list-style-type: none">Former of Cultural Society KARA Organizer of Climate Change Conference	
World Astronomy Week	2017
<ul style="list-style-type: none">Night Sky Institute	
Civil Aviation Technology College	2012-2015
<ul style="list-style-type: none">Organizer of WaterRocket Competition Road & Urban Development & The Related Industries Exhibition3rd, 4th, 5th International Aviation & Space Industries Exhibition of Iran	

VOLUNTEER EXPERIENCE

Executive Member

2021

- *The 7th 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

University of Oxford Responsible Technology Institute Student Network | Royal Aeronautical Society | Space Generation Advisory Council
Space & Satellite Professionals International | American Physical Society | Institute of Mathematical Statistics | Royal Statistical Society
University of Tehran Chess Club | Astronomers Without Borders | Educational Development Center, TUMS

CERTIFICATES

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

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

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