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Machine Learning Researcher

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RESEARCH INTEREST

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

University of Tehran

- Ranked 1st universities in Iran based on UsNews
- GPA: 17.81/20 | Rank: 1st in class
- Thesis: An End to End Deep Learning Framework for inertial Attitude Estimation
- Award: Full Tuition Fee Waiver

2019-2022(exp)

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's

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 | Use SolidWorks and Inventor to Design the Structure

2019-2020

Design and Implication of Scientific-Exploration CanSat

University of Tehran

- Use Raspberry Pi for Computer Vision and Pattern Detection
- Sensor Fusion for Estimating Environmental Parameters | INS-GPS Integration for Navigation Parameter Estimation

2019-2020

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
- 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

2018-2020

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++ L ^A T _E X
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

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

Fuzzy Logic Lab

Working on Fuzzy Inference Systems project such as fuzzy tuned complementary filter for IMU based attitude estimation

2019-present

- Websites:** University of Tehran Fuzzy Logic Lab | USERN Fuzzy Logic Lab Interest Group | ResearchGate

Avionics Lab

Aviation Industry Training Center

2018-2020

- 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

- 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

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

INTERNSHIPS

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

- Using **Airbus A-320** 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

Aviation Industry Training Center

- Internship Instructor:** Avionics Technology (B.Eng.) and Aircraft Maintenance (B.Eng.) 2019-2020
- Internship Instructor:** Avionics Technology (A.E.T) and Aircraft Maintenance (A.E.T) 2018-2020
- Lab Instructor:** Electronic 1, Electronic 2, Electronic 3, Electronic Circuits 1, Electronic Circuits 2, Microprocessors 2018-2020
- Lab Instructor:** Aircraft Instruments 2018-2020

WORK EXPERIENCE

Martial Arts Instructor

Iran martial arts federation

2015-Present

- Black Belt Dan II

Manager

Arman Imen Passargad

2013-Present

EXECUTIVE ACTIVITIES

Universal Scientific Education and Research Network

2021

- 6th** 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

- 4th** Student Education Development Festival | **20th, 21st, 23rd** 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
- 3rd, 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