Ali BaniAsad

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Education

Sharif University of Technology *Tehran*
Master of Science in Aerospace Engineering Sep. 2022 - Now

Sharif University of Technology *Tehran*
Bachelor Science in Aerospace Engineering Sep. 2017 - . 2022
GPA: 3.46/4 (16.68/20) via 141 credits (total) GPA: 3.72/4 (17.56/20) via 96 credits (last 6 semesters)

Technical Skills

Programming Languages	ROS, C, Python, MATLAB, Git, Arduino
Professional Software	Simulink, Linux, LaTeX, Terminal, Web scraping, TensorFlow, PyTorch
Quantitative Skills	Optimization, Heuristic Optimization, Data Structures, Image Processing, Machine Learning, Artificial Neural Networks, Deep Learning
Languages	Farsi (Native), English (Full Professional Proficiency)

Publications

[1] **Ali BaniAsad**, Alireza Sharifi, Reza Pordal, Hadi Nobahhari. "Attitude Control of a 3-DoF Quadrotor Platform Using a Linear Quadratic Integral Differential Game Approach." *ISA Transactions*, 2023 (Under Review).

[2] Hadi Nobahhari, **Ali BaniAsad**, Alireza Sharifi. "Linear Quadratic Integral Differential Game Applied to the Real-time Control of a Quadrotor Experimental Setup." *ICRoM*, 2022.

[3] Alireza Sharifi, Saeed Mozafari, **Ali BaniAsad**. "Robust In-Motion Transfer Alignment of Low-Grade Inertial Navigation Systems with Recurrent Neural Networks in the Event of Reference Malfunction." *IEEE*, 2023 (Work in Progress).

Research Projects

Robust RL Guidance in Low-Thrust, Multi-Body Environments (Master's Thesis) *Tehran*
Developed a robust reinforcement learning algorithm for guiding spacecraft in low-thrust, multi-body dynamical environments. The project is available at here. Nov. 2021 - Dec. 2022

Multi-Objective Optimization for REMARK Software *Tehran*
Developing an advanced multi-objective optimization algorithm based on the REMARK optimization approach. The project is available at here. Nov. 2021 - Dec. 2022

DATCOM Trim Diagram GUI *Tehran*
Developed a user-friendly interface for the USAF Digital DATCOM software, simplifying aerodynamic analysis. The project is available at here. Nov. 2021 - Dec. 2022

Optimized Flocking of Autonomous Drones in Confined Environments (HIL System) *Tehran*
Implemented a hardware-in-the-loop system optimizing autonomous drone flocking in confined spaces. The project is available at here. Jan. 2022 - May 2022

AIAA Regional Jet Design Competition *Tehran*
Contributed to the design of a regional jet for the AIAA competition, showcasing expertise in aircraft design. Sep. 2021 - Dec. 2021

Aircraft Turbine Design (Turbofan Engine) *Tehran*
Collaborated on the design and optimization of a turbofan engine for the Boeing 737 airplane. Sep. 2021 - Nov. 2021

Awards and Honors

Oct. 2022	**Iranian Aerospace Society's Best Undergraduate Thesis Award**: Awarded for the exceptional undergraduate thesis titled "Control of a 3DOF Quadcopter Stand using a Linear-Quadratic-Integral Controller based on Differential Game Theory."	*Iran*
Sep. 2017	**Ranked top 0.5%**: "among 150,000 participants of Iran's Undergraduate University Entrance Exam"	*Iran*

Research and Teaching Experience

Research Assistant *ScholarOne Website*

Sharif University of Technology Sep. 2020 - Present

- Supervised by Dr. H. Nobahari
- Head of CNAV Lab

Teaching Assistance *Several Cities*

Sharif University of Technology Sep. 2017 - Present

- Basic Programming of C, Tehran, Sep. 2017
- Automatic Control (2021 Present), Tehran, Sep. 2021
- Control Lab (2021 Present), Tehran, Sep. 2021
- Dynamic (2021 2022), Tehran, Sep. 2021
- Introduction to Aerospace (2021 2022), Tehran, Sep. 2021

Notable Courses

Sharif University of Technology *Tehran*

Coursed studied at Sharif University of Technology

- Basic Programming of C (20)
- Engineering Mathematics (19.8)
- Engineering Probability and Statistics (20)
- Numerical Calculations (20)
- Automatic Control (18.1)
- Control Lab (18.5)
- Optimal Control (17.5)
- Aircraft Design II (18.3)
- Flight Dynamics II (18.3)
- Bachelor Thesis (20)

Online Courses *Online*

Online Courses Studied at Coursera Sep. 2020 - Present

- Robotics
- IBM AI Engineering
- Deep Learning
- Reinforcement Learning
- Machine Learning
- Computer Vision
- Introduction to Embedded Machine Learning
- Game Theory
- Programming for Everybody

1 Experience

1.1 IT Experience

Engineer *Testing Corporation*

07/2000–12/2020

2020