Benyamin Ebrahimi

Curriculum Vitae

Contact:

Email: **Eb_beny@yahoo.com**

Profile

As an enthusiastic engineer and researcher in complex engineering systems design, control, optimization, and systems engineering, I have developed expertise in optimization algorithms, probabilistic design optimization, multi-agent systems, path planning and control/optimal control. I am now seeking a position to further advance my research and make meaningful contributions to cutting-edge developments in my areas of interest.

Education

Postdoctoral Researcher

2024 - 2025 **Adana Alparslan Türkeş Science and Technology**, Adana, Turkey.
TÜBİTAK Research Fellowship

Ph.D.

2018 – 2024 **K.N. Toosi University of Technology (KNTU)**
Aerospace Engineering - Flight Dynamics and Control

GPA: 19.05/20 **Thesis title:** *Development of multi-agent cooperative search and coverage net design.*

Master of Science

2014 – 2017 **K.N. Toosi University of Technology (KNTU)**
Aerospace Engineering - Flight Dynamics and Control

GPA: 17.35/20 **Thesis title:** *Multidisciplinary general aviation aircraft design optimization under uncertainties.*

Bachelor of Science

2009 – 2014 **Science and Research Branch of Azad university (IAU)**
Aerospace Engineering.

GPA: 16.46/20 **Thesis title:** *Wind tunnel Design (Diffuser, Nozzle and Settling chamber*

Research Interests

- *Systems Architecting. Systems Analysis and Modeling. System Design optimization.*
- *Multidisciplinary Design Optimization (MDO), Uncertainty-based MDO (UMDO), Probabilistic Design.*
- *Surrogate modeling, Design of Experiments (DOE), Monte-Carlo Simulation.*
- *Optimal Control, Flight Dynamics, Control Strategy, Artificial Intelligence.*
- *Path Planning, Trajectory Design and Trajectory Optimization.*
- *Urban air mobilities, Autonomous Vehicles, Multi-agent Systems.*
- *Systems Engineering, Model-Based Systems Engineering (MBSE), Digital Twins.*

Publication

Books chapter

2024 **Ebrahimi. B,** Bataleblu. A. A, "*Intelligent Reliability Based Design Optimization: Past and Future Research Trends*", Developments in Reliability Engineering, Elsevier, 2024.

Journals

Under review **Ebrahimi. B**, Asadi. D, Khaneghaei. M, "*Hybrid Coverage Path Planning for Non-Convex Urban Areas using Modified Dubins Curves with Exact Decomposition: A Case Study of Adana City* ", Unmanned Systems, 2025.

Under review Asadi. D, **Ebrahimi. B**, Hazeri. M, Haghighi, H, "*Experimental Development and Optimization of Hybrid-Electric Multirotors for Extended Flight Endurance and Payload*", Optimization and Engineering, 2025.

2025 Khaneghaei. M, Asadi. D, **Ebrahimi. B**, Hazeri. M, Farsadi. T, Nabavi Chashmi. Y , Durhasan. T, "*A Unified Model Based MMDO Approach to Design a Long-Endurance Solar*

Aerial Vehicle Under Realistic Mission Constraints ",Structural and Multidisciplinary Optimization, 2025.

2025 **Ebrahimi. B**, Bataleblu. A. A, Roshanian. J, "*Bi-level Voronoi Strategy for Cooperative Search and Coverage* ", Swarm and Evolutionary Computation, 2025.

2025 Darvishpoor, S., Roshanian, J., Mesbah, A., Haghighi, K., **Ebrahimi, B.**, Serbezov, V. and Georgiev, K., "A Survey of the Effects of Vehicle Configuration on Urban Air Mobility ", *Applied Sciences*, *15*(6), p.3181, 2025.

2024 **Ebrahimi. B**, Roshanian. J, Bataleblu. A. A, Khorambakht E, "*A Novel Approach to Feasible Optimal Cooperative Search and Coverage for Wildfire Emergency Management*",International Journal of Disaster Risk Reduction, 2024.

2024 **Ebrahimi. B**, Bataleblu. A. A, Roshanian. J, "*Developing an Intelligent Systems Design Framework Based on Multidisciplinary Design Analysis and Multi-Agent Thinking Integration*", Expert Systems With Applications, 2024.

2023 **Ebrahimi. B**, Roshanian. J, Bataleblu. A. A, "*Optimal Strategy for Multi-agent Mission Segregation: Search and Coverage Application*", Journal of Aerospace Science and Technology, 2023.

2022 **Ebrahimi, B**., Nadoushan, M. J., Roshanian, J. "*Optimal design and reconfiguration of flower constellations: An application to global disaster management*." Acta Astronautica (2022).

2019 Roshanian. J, Bataleblu. A. A, **Ebrahimi. B**, Amini. A. A, **"***Comprehensive design optimization software for a type of general aviation aircraft: a multidisciplinary approach***"**, Aerospace Knowledge and Technology Journal, 2019. (In Persian)

2018 Bataleblu. A. A, Roshanian. J, **Ebrahimi. B**, **"***An Augmented Surrogate-Assisted Reliability-based Design Approach and Application to Complex Systems Design***"**, Journal of Modares Mechanical Engineering, 2018. (In Persian)

2017 Roshanian. J, Bataleblu. A. A, Farghadani. M. H, **Ebrahimi. B**, **"***Multi-Objective Multidisciplinary Design Optimization of a General Aviation Aircraft***"**, Journal of Modares Mechanical Engineering, 2017. (In Persian)

Conferences

2025 Bataleblu. A.A, **Ebrahimi. B**, Ben Ali. M, Rauch. E, "Multi-Agent Systems for Data-Driven Decision Making in Forest Fire Management", 7th Experiment@ International Conference in Azores, Portugal.

2023 **Ebrahimi. B**, Bataleblu. A. A, Roshanian. J, Serbezov. V, "*Enhancing Efficiency of Multi-Agent Flying Systems Using Optimization*", In *BulTrans-2023*, Sozopol, Bulgaria, Sep 2023.

2023 **Ebrahimi.B**, Nadoushan. M. J., Barzamini.F, "*Monitoring and Assessment of Climate Change Using an Optimal Reconfigurable Flower Constellation*", Global Space Conference on Climate Change (GLOC 2023), Oslo, Norway, May 2023.

2021 **Ebrahimi.B**, Barzamini.F, "*Aircraft System Identification Using Parametric Approaches and Intelligent Modelling*", The 42nd International IEEE Aerospace Conference, Big Sky, Virtual, Mar, 2021.

2017 Roshanian. J, Bataleblu. A. A, **Ebrahimi. B**, Amini. A. A, **"***An Augmented Sequential Optimization and Reliability Assessment for Reliability-based Design Optimization***"**, 12th World Congress on Structural and Multidisciplinary Optimisation, Braunschweig, Germany, June 2017.

2017 Roshanian. J, Bataleblu. A. A, Farghadani. M. H, **Ebrahimi. B**, **"***Metamodel-Based Multidisciplinary Design Optimization of a General Aviation Aircraft***"**, 12th World Congress on Structural and Multidisciplinary Optimisation, Braunschweig, Germany, June 2017

Experiences

Researcher

2024 - 2025 **Adana Alparslan Türkeş Science and Technology**, Adana, Turkey**.**

- Performing Multidisciplinary Design Optimization (MDO) to integrate and optimize across various engineering designs.
- Applying advanced design optimization methods to enhance system performance.
- Solving complex path planning problems for optimal routing and implementing trajectory optimization strategies for dynamic and constrained environments.
- Advising and mentoring graduate and undergraduate students on thesis and research projects.

2018 - 2024 **Intelligent Control Systems Institute - ICSI**, KNTU, Tehran, Iran**.**

- Solving deterministic and stochastic design optimization and MDO problems.
- Conducting complex systems design optimization involving multiple engineering disciplines.
- Performing multi-agent problems and developing related algorithms for coordination, planning, and control.
- Advising and mentoring graduate and undergraduate students on thesis and research projects.

Teacher Assistant

Adana Alparslan Türkeş Science and Technology, Adana, Turkey.

- Flight Dynamics (Undergraduate Course)

K.N. Toosi University of Technology, Tehran, Iran.

- Optimal Control (Graduate Course)
- Artificial intelligence fundamental (Undergraduate Course)
- Aircraft Design 1 (Undergraduate Course)

Journal Reviewer

Aerospace Science and Technology (1)
Intelligent Service Robotics (2)

Membership

Since 2017 Member of the International Society for Structural and Multidisciplinary Optimization (**ISSMO**)

Honor

2017 2nd place Student in M.Sc. graduation, aerospace Engineering, Flight Dynamics & Control.

Computer Skills and Experiences

Programming Software	*MATLAB, Simulink, Python*
Computer Aided Design and Analysis	*CATIA, Solidworks, Ansys*
Other Software	*MS Office,*

Language

English: **IELTS** Certificate
Persian: Native
Germany: B2

Personality & Ability

Programming, Project Management, Team-Working,
Analytical Solving & Open to critics or new ideas.

References

1 Dr. Davood Asadi,
Associate Professor, Faculty of Aerospace Engineering, Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi
Email: dasadihendoustani@atu.edu.tr

2 Dr. Jafar Roshanian,
Professor, Faculty of Aerospace Engineering, Khaje Nasir Toosi University of Technology
Email: roshanian@kntu.ac.ir

3 Dr. Ali Asghar Bataleblu,
Post-Doctoral Research Fellow, Free University of Bozen-Bolzano, Bolzano, Italy.
Email: aliasghar.bataleblu@unibz.it

Contact:
⇨ Email: **Eb_beny@yahoo.com**