

MSc student in Robotics, Systems and Control at ETH Zurich, and an Aeronautical Engineering graduate of Istanbul Technical University, ranked first in the Faculty of Aeronautics and Astronautics. Experienced in GNC, INS/GNSS sensor fusion with Kalman filtering, trajectory optimization and machine learning for planning and control. Now working on [robot learning](#).
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EDUCATION	 ETH Zurich Sep 2026 – Feb 2028 MSc Robotics, Systems and Control MPC · Recursive Estimation · Robot Dynamics · Planning & Decision Making · Probabilistic AI · Game Theory & Control · Advanced Topics in Control · Vision Algorithms for Mobile Robots · Robot Learning
	 Istanbul Technical University Sep 2022 – Jul 2026 BSc Aeronautical Engineering GPA 3.95/4 · Ranked 1st in the Faculty of Aeronautics and Astronautics Flight Mechanics · Automatic Control · Flight Stability & Control · Optimal Control · Guidance, Navigation & Control · RL & Optimization-Based Control · Aerodynamics · Aircraft Structures · Aircraft Design
EXPERIENCE	 Roketsan Missiles Nov 2025 – Jul 2026 Candidate Engineer (engineering trainee program), Guidance & Autopilot — Air Defense Systems · Part-time Completed a six-module, 14-week in-house Guidance & Autopilot program in MATLAB/Simulink, covering 3-D engagement kinematics, proportional-navigation/pure-pursuit guidance, and cascaded/state-feedback roll-autopilot design with stability, robustness, delay, noise and actuator-limit analyses.  Roketsan Missiles Jul 2025 – Sep 2025 Sensor Fusion Algorithms Intern · Full-time Reimplemented and validated Groves' MATLAB INS/GNSS integration using Kalman filtering, including inertial mechanization and IMU error models; assessed position, velocity and attitude estimates against simulated ground truth.  Collins Aerospace Jul 2025 Summer Intern, Thrust Reverser Systems · Full-time, 4 weeks Assisted with thrust reverser maintenance and nacelle inspections for damage and wear.  Turkish Aerospace Dec 2024 – Jun 2025 Candidate Engineer (engineering trainee program), Aeroelasticity Department (Hurjet) · Part-time Developed a real-time vibration fatigue estimation algorithm for jet aircraft wing structures using frequency-domain methods, continuing an ITU research project funded by Turkish Aerospace (since Sep 2024) that led to a peer-reviewed paper at AIAC 2025.
RESEARCH & PROJECTS	 Mixtures of Experts for Multi-Task Robot Learning Ongoing project · Supervisor: Prof. Ioannis Mandralis (University of Cambridge) Advisors: Sam Mady (NVIDIA), Prof. Demetri Psaltis (EPFL)  Learning to Accelerate Receding-Horizon MILP Path Planning Oct 2025 – Jun 2026 Graduation project · Advisor: Dr. Murad Abu-Khalaf · Submitted to ECC 2027 GRU predict-and-fix: 79% faster planning, 87/100 plans optimal. PyTorch, SCIP. Code  B737-800 Wind-Field Trajectory Optimization Jun 2026 UCK 439E Optimal Control, ITU Direct collocation (CasADi/IPOPT) vs. a PPO policy; PPO within 1.4% of optimal fuel. Python. Code  Aerospace Flight Mechanics Expert Assistant Jun 2026 UCK 358E AI, ITU · Team of three Baseline evaluation and LoRA fine-tuning of Qwen3-1.7B, compared with RAG and GraphRAG. Code  Flight Mechanics Mission Simulation: New York JFK to Paris CDG Jan 2025 Flight mechanics term project Aircraft selection and full-mission simulation with BADA-style performance data in MATLAB. Code
PUBLICATIONS	[1] Learning to Accelerate Receding-Horizon MILP Path Planning · Y. E. Kara, M. Abu-Khalaf · ECC 2027 · Paper <i>submitted</i> [2] Vibration Fatigue Estimation for Jet Aircraft by Using Frequency Domain Methods · B. Yilmaz, T. Turan, Y. E. Kara, O. Eserler, S. Orhan, A. Tatar, O. U. Güngör · AIAC 2025 · Funded by Turkish Aerospace Paper
SKILLS	Programming Python, C/C++, MATLAB/Simulink GNC & Estimation EKF/UKF, INS/GNSS Fusion, PN Guidance, Autopilot Design Control & Robotics MPC, LQR, Trajectory Optimization, Isaac Sim, Isaac Lab, PyBullet, Gymnasium Optimization MILP, CasADi/IPOPT, Gurobi, SCIP, SciPy Machine Learning RL (PPO/SAC), GNNs (PyG), LoRA, PyTorch, SB3 Data & Tools NumPy, pandas, Git, Docker, Linux, LaTeX, CAD, FEM AI Tools Claude Code, Prompt & Context Engineering, Agentic Workflows
HONORS & SCHOLARSHIPS	 Turkish Education Foundation (TEV) — Foreign Master's Scholarship · MSc at ETH Zurich  Turkish Education Foundation (TEV) — Outstanding Achievement Scholarship · TEV's highest undergraduate scholarship, awarded to about 100 students a year  T3 Foundation — National Technology Scholarship
AWARDS & TRAINING	 TEKNOFEST AI-Assisted Airline Optimization Competition — 2nd Place · TRY 200,000 prize · Sep 2026 Built a MILP-based optimization approach to strengthen Turkish Airlines' competitiveness in the market.  NATO STO Summer School on Decision-Making · Aug 2025  Defense Industry 101 & 401 Programs · Grades: AA (101), BA (401) · 2024 – 2025
LANGUAGES & TESTS	Turkish (native) · English (C1) · IELTS 7.0/9.0 · GRE Quantitative 170/170
HOBBIES	Strategy games · Turkish folk music · Cycling · Tennis · FPV drones