Ahmet Yildiz

ahmetstar150@gmail.com | +90 545 318 80 20 |
https://www.linkedin.com/in/ahmet-y%C4%B1ld%C4%B1z-9505721a0/ | https://github.com/AhmetYldz39
Istanbul, Türkiye

Professional Summary

Software engineer with a strong foundation in Python, machine learning, and simulation, combined with hands-on aerospace experience. Build modular, testable systems for data processing, optimization, and AI-driven decision making. Comfortable across the stack from algorithm design to rapid prototyping in Unity (C#). Currently pursuing an M.Sc. in Computer Engineering (AI focus).

Technical Skills

- **Languages:** Python, C#, C++, MATLAB, SQL, HTML/CSS (basic)
- **AI/DS:** NumPy, Pandas, scikit-learn, TensorFlow, PyTorch, data pipelines, model evaluation
- **Backend/Tools:** Flask, FastAPI, Git/GitHub, Linux (basic), AWS (basic)
- **Simulation/Game:** MATLAB/Simulink, Unity (2D/3D), NavMesh

Experience

- **Turkish Aerospace Industries (TAI)** *Sept 2023 – Present*
  Software Engineer — Aerospace Applications *Istanbul, Türkiye*
  - Developed and optimized flight dynamics & control algorithms using **Python, MATLAB/Simulink**; built reusable simulation modules for testing guidance and control logic.
  - Implemented **optimization** routines for maneuver/trajectory planning; automated analysis workflows and reduced turnaround times.
  - Created **data processing pipelines** (Python) for model evaluation and reporting; improved reproducibility and code quality via version control.
  - Applied **ML techniques** for performance modeling and controller tuning; collaborated with avionics/software teams for integration.
- **Turkish Aerospace Industries (TAI)** *Apr 2022 – Sept 2023*
  Part-time Flight Mechanics Engineer *Istanbul, Türkiye*
  - Conducted system identification and performance simulations; strengthened physics-based modeling applicable to real-time simulation.
  - Supported controller prototyping and validation; practiced iterative development and test-driven workflows.

Education

- **M.Sc. in Computer Engineering (AI Focus)** *2024 – Present*
  Istanbul Technical University *Istanbul, Türkiye*
- **B.Sc. in Aeronautical Engineering** *2017 – 2023*
  Istanbul Technical University *Istanbul, Türkiye*
  - Erasmus Exchange — University of Orléans, France (2021)

Projects

- **MLAT-R Drone Swarm Fire Detection & Suppression | *Python***
  - Implemented **Multi-Level Action Tree Rollout (MLAT-R)** to coordinate multi-drone systems for wildfire detection and response in simulation.
  - Built autonomous navigation and zone prioritization; integrated basic CV-based fire localization for agent decisions.
- **Explainable Clustering on MovieLens1M (ExKMC) | *Python, scikit-learn***
  - Applied **ExKMC** for interpretable cluster assignments; benchmarked against K-Means using Pandas/NumPy & evaluation metrics.
  - Improved interpretability with minimal accuracy loss; produced clear, reproducible notebooks and reports.

- **Policy Iteration for Terrain Navigation | *MATLAB***
  - Implemented model-based **policy iteration** to compute optimal actions over a 2D terrain; explored reward/transition modeling.
  - Prepared groundwork for visualization/animation of policy and agent trajectories.
- **Mini Roguelike Labirent Game | *Unity, C#***
  - Developed a 2D roguelike with procedural room transitions, player controller, basic enemy AI, UI (health/interaction), and scene fade/return points.
- **3D Drone Defense | *Unity, C#***
  - Built gameplay systems: player controller, firing/projectiles, resource systems; optimized with **object pooling** and NavMesh pathfinding.
- **Rocket Design (Team Lead)**
  - Led a 6-person team in the design, simulation, and launch preparation of a reusable rocket for a national rocketry competition (Teknofest). Managed project timeline, assigned technical tasks, and coordinated with suppliers, demonstrating strong project management and cross-disciplinary collaboration skills.

Languages

- Turkish (Native), English (Fluent), French (Intermediate)