Oguz Altan

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Education

RWTH Aachen University — Aachen, Germany
M.Sc. in Electrical Engineering and Information Technology (GPA: 2.2/1.0) — *Nov 2020 – Sept 2023*

- *Major:* Systems and Automation
- *DAAD Scholarship for Completing Studies:* Stipend recipient during the final year of M.Sc. (2022)
- *Relevant Courses:* Artificial Intelligence, Deep Learning, Robotics and Man-Machine Interaction I & II, Reinforcement Learning and Learning-Based Control, Current Concepts and Trends in the Fields of Robotics and Simulation, Simulation of Robotic Systems - Sensors - Environment - Processes, Digital Image Processing

Bilkent University — Ankara, Turkey
B.Sc. in Electrical and Electronics Engineering (GPA: 3.35/4.00 ≈ 1.9/1.0*)* — *Sept 2016 – Jun 2020*

- *Scholarship of the Turkish Prime Ministry:* Stipend recipient during the B.Sc. (2016 - 2020)
- *Relevant Courses:* Neural Networks, Data Science, Optimization in Engineering, Control Theory, Nonlinear Systems

Experience

Siemens AG — Munich, Germany
Machine Learning Engineering Intern and Working Student — *Mar 2022 – Dec 2022*

- Conducted research and development in anomaly detection for the AI-integrated Wire Arc Additive Manufacturing (WAAMAI) process, by implementing and evaluating various machine learning and deep learning algorithms.
- Based on F1 and PR AUC scores, found that CNN-based autoencoders perform best in detecting anomalies.
- Responsibilities included statistical data analysis, process monitoring, automation software development, and edge computing with NVIDIA Jetson.

Fraunhofer IIS | FAU Erlangen-Nürnberg — Erlangen, Germany
Research and Engineering Intern — *Jun 2019 – Sept 2019*

- Redesigned and programmed wireless embedded systems, which are used by members and undergraduate students of the IoT and Embedded Electronics teams of FAU Erlangen-Nürnberg and Fraunhofer IIS.

Select Research & Projects

Tracking and Evasion using Co-Training with Context Knowledge
Master's Thesis, Fraunhofer FKIE & RWTH Aachen University, 2023 (Grade: 1.3/1.0)

- Researched UAV trajectory optimization for precise target tracking in urban environments. Developed a multi-agent deep reinforcement learning system with game-theoretic co-training and procedural generation for map images.
- Designed and implemented a CNN-based RL model to process map images and extract observations.
- Demonstrated improved agent contextual awareness in urban environments, enabling effective tracking and evasion.

Mobile Robotics in Disaster Scenarios
Seminar Paper, Institute of Man-Machine Interaction at RWTH Aachen University, 2021

- Authored a review article for the seminar course *Current Concepts and Trends in Robotics and Simulation Science.*

Accompanying Humans and Achieving Designated Tasks with Autonomous Mobile Robots
Bachelor's Final Project, Bilkent University, 2020

- Developed an autonomous land robot with ROS, featuring LIDAR and YOLO for object tracking. The robot tracks humans, evades obstacles, and ensures smooth traversal across diverse terrains.
- Conducted simulations in ROS with Gazebo integration to validate system performance.

Skills

Programming:	Python, MATLAB & Simulink, Java, LaTeX, Assembly, VHDL
Libraries:	PyTorch, TensorFlow, Gym, Ray, SciPy, Scikit-Learn, Pillow
Tools & Software:	Linux, ROS, Git, Docker, VS Code, EAGLE, MS Office
Languages:	English (Fluent), French (Fluent), German (Beginner), Turkish (Native)

Volunteering

- **IEEE Bilkent Student Branch Vice Chair:** Mentoring and guiding undergraduate students, administrating and supervising technical activities, lectures, conferences, and competitions (2019 - 2020).
- **IEEE Bilkent Student Branch Robotics and Automation Society (RAS) Coordinator:** Teaching fundamentals of electronics and Arduino microcontroller programming to undergraduate students (2018 - 2019).

Aachen, 16.04.2024