Oguz Altan

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Summary

AI/ML Engineer with a Master's Degree from RWTH Aachen University, specializing in data science, deep learning (DL), reinforcement learning (RL), and robotics. Proven track record in developing AI-powered solutions through coursework, internships, projects, and research. Experience in computer vision, image processing, NLP, control theory, and statistical data analysis. Proven ability to develop advanced AI solutions, delivering substantial enhancements in accuracy and efficiency. Proficient in Python, MATLAB, and a range of AI/ML frameworks and libraries.

Skills

Programming:	Python, MATLAB & Simulink, SQL, Java, LaTeX, Assembly, VHDL
Libraries:	Numpy, Pandas, 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)

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:* Awarded stipend during final year (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: $3.35/4.00 \approx 1.9/1.0$*)* *Sept 2016 – Jun 2020*

- *Scholarship of the Turkish Prime Ministry:* Awarded stipend (2016 - 2020)
- *Relevant Courses:* Neural Networks, Data Science, Optimization in Engineering, Control Theory, Nonlinear Systems

Select Work Experience

Fraunhofer FKIE Wachtberg, Germany
Master's Thesis Student, Grade: 1.3/1.0 *Feb 2023 – Sept 2023*

- *Title:* Tracking and Evasion using Co-Training with Context Knowledge
- Researched and optimized UAV trajectory for precise target tracking in urban environments using a CNN-integrated multi-agent deep RL system.
- Implemented procedural generation to create diverse artificial urban maps, enhancing testing scenario variety and robustness of the RL system.
- Enhanced agent contextual awareness, enabling effective tracking and evasion through the integration of game-theoretic co-training and feature extraction from map images.

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

- Conducted R&D in anomaly detection for the AI-integrated Wire Arc Additive Manufacturing (WAAMAI) process, implementing and evaluating various ML and DL algorithms.
- Based on F1 and PR AUC scores, identified that CNN-based autoencoders perform best in detecting anomalies.
- Performed statistical data analysis, process monitoring, automation software development, and edge computing with NVIDIA Jetson.

Select Research & Projects

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 using YOLO and LIDAR for human tracking and obstacle evasion, and integrated with ROS for Gazebo simulation.

Hand Gesture Controlled Remote Car
Course Project: Microprocessors, Bilkent University, 2018

- Designed and developed a 4WD remote car controlled via hand gestures, utilizing Bluetooth communication with NXP FRDM-KL25Z and Arduino Nano microcontrollers.

Aachen, 04.07.2024