Oguz Altan

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Summary

AI/ML Engineer with a Master's Degree in Electrical Engineering and Information Technology from RWTH Aachen University. Proficient in machine learning, deep learning, reinforcement learning, and robotics, with solid knowledge of computer vision, image processing, natural language processing, and statistical data analysis. Demonstrated expertise through coursework, internships, projects, research, and thesis. Proven ability to develop innovative AI-powered solutions, with a strong commitment to continuous learning and staying at the forefront of AI.

Skills

Programming:	Python, MATLAB & Simulink, 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:* 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: $3.35/4.00 \approx 1.9/1.0$*)* *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

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 UAV trajectory optimization for precise target tracking in urban environments.
- Employed multi-agent deep reinforcement learning (RL) system with the game-theoretic co-training approach.
- Implemented procedural generation to generate diverse artificial urban maps that resemble typical urban layouts.
- Designed a CNN-based reinforcement learning RL to process map images and extract observations.
- Demonstrated improved agent contextual awareness in urban environments, enabling effective tracking and evasion.

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.

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 that tracks humans, evades obstacles, navigates terrain smoothly, and uses the YOLO framework and LIDAR for object tracking.
- Designed and simulated in Gazebo with ROS integration.

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, 27.05.2024