Oguz Altan

Address: Paul-Huml-Bogen 25 80995 Munich
Mobile: +49 15204495391
Date of Birth: 12.07.1997

LinkedIn: linkedin.com/in/oguzaltan
Email: oguzaltan148@gmail.com
GitHub: github.com/oguzaltan

AI/Robotics Engineer specializing in autonomous systems, machine learning, deep learning, reinforcement learning, and data science, with a strong track record of developing innovative solutions across diverse projects and deep expertise in cutting-edge technologies.

Experience

Dec 2024 – present
Paderborn, Germany

Robotics Researcher / Wissenschaftlicher Mitarbeiter
University of Applied Sciences (FHDW) Paderborn
Tech: Python, C++, ROS2, Nav2, SLAM, Gazebo, RViz, Git, Linux

Title: *SilvaBot - Fully Autonomous Robot for Scalable, Climate-Change-Adapted Forest Conversion*
Autonomously reforesting areas affected by climate change and wildfires through **ground and aerial robots** using **swarm intelligence**.
Focus on the research and development of robotics software architectures, focusing on **swarm behavior**, **multi-sensor fusion**, **task and motion planning**, **navigation**, **mapping**, **perception**, and **obstacle avoidance** algorithms for autonomous **ground** and **aerial** robots operating in **dynamic** environments.

Feb 2023 – Sep 2023
Wacthberg, Germany

AI / Machine Learning Engineer *- Master's Thesis Student*
Fraunhofer FKIE
Tech: Python, NumPy, Gym, Ray, RLlib, TensorFlow, TensorBoard, Keras, CNN, PIL, Git, Docker, Linux

Title: *Tracking and Evasion using Co-Training with Context Knowledge* – Grade: 1.3
Optimized **unmanned aerial vehicle flight paths** for target tracking in cities using **deep reinforcement learning**.
Integrated realistic urban environments and **procedural map generation** for enhanced performance.

Mar 2022 – Dec 2022
Munich, Germany

AI / Machine Learning Engineer *– Intern and Working Student*
Siemens
Tech: Python, NumPy, Pandas, TensorFlow, TensorBoard, CNN, Excel, Git, NVIDIA Jetson, Linux, Docker

Part of a **research and development** team of 40.
Focus on optimizing steel and aluminum **3D printing** for car and plane chassis/bodies.
Data processing and cleaning of raw print data from *AI-integrated Wire Arc Additive Manufacturing processes*.
Developing and testing **machine learning models** for **detecting anomalies** in the 3D print process.
Identified **autoencoders** as the most effective for **anomaly detection**, based on **F1** and **PR AUC** scores.

June 2019 – Sep 2019
Erlangen, Germany

Electrical Engineer *- Intern*
Fraunhofer IIS
Tech: EAGLE, Proteus, PCB Design, Microprocessors, Embedded Systems, Prototyping, Linux

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

June 2018 – July 2018
Ankara, Turkey

Electrical Engineer *– Intern*
TUBITAK Space Technologies Research Institute
Tech: EAGLE, Proteus, Digital Signal Processing, Op-Amp, Noise Reduction, Analog to Digital Signal Conversion

As part of the satellite payload electronic design team, designed and implemented a systematic method for **transmitting analog signals** through a **noisy** medium and worked on **analog-to-digital signal conversion**.

Education

Oct 2020 – Sept 2023
Aachen, Germany

RWTH Aachen University
M.Sc. Electrical Engineering, Information Technology, and Computer Engineering

GPA: 2.2
DAAD Scholarship for Completing Studies (2023)

Oct 2016 – June 2020
Ankara, Turkey

Bilkent University
B.Sc. Electrical and Electronics Engineering

GPA: 1.9
Scholarship of the Turkish Prime Ministry (2016 - 2020)

Skills

Programming	Python, C++, MATLAB, SQL, Java, LaTeX, VHDL, Assembly
Robotics & Simulation	ROS 2, Gazebo, Simulink, RViz, Nav2, SLAM Toolbox, BehaviorTree.CPP
AI & Machine Learning	PyTorch, TensorFlow, Scikit-Learn, Ray, OpenAI Gym, NumPy, Pandas, SciPy
Tools & Software	Linux, Git, Docker, VS Code, EAGLE, MS Office
Languages	English (Fluent), French (Fluent), German (Beginner), Turkish (Native)
General	Scientific Research, Technical Writing, Teamwork

Projects

2020 - 2021
Summer Semester

Mobile Robotics in Disaster Scenarios
Institute of Man-Machine Interaction at RWTH Aachen University

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

2019 - 2020
Winter - Summer Semester

Accompanying Humans and Achieving Designated Tasks with Autonomous Mobile Robots
Industrial Design Bachelor's Project

Developed an autonomous land robot using **YOLO** and **LIDAR** for human tracking and obstacle evasion, and conducted simulations with **ROS** and **Gazebo**.

2017 - 2018
Summer Semester

Hand Gesture Controlled Remote Car
Microprocessors Course Project

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

2017 - 2018
Winter Semester

Rotating Object Detector
Digital Design Course Project

Implemented a **BASYS 3 FPGA**-based mechanism detecting objects within a range, coded with **VHDL.**