

# Oguz Altan, M.Sc.

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AI-focused software engineer with expertise in machine learning, deep learning, reinforcement learning, data science, automation, and robotics, backed by a diverse project portfolio utilizing a wide range of technologies.

## Experience

Feb 2023 – Sep 2023  
Wachberg, Germany

### **Machine Learning and Reinforcement 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: 1.3/1.0

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

### **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: 2.2/1.0**

DAAD Scholarship for Completing Studies: Awarded stipend (2022)

Oct 2016 – June 2020  
Ankara, Turkey

### **Bilkent University**

**B.Sc. Electrical and Electronics Engineering – GPA: 3.35/4 ~ 1.9/1.0**

Scholarship of the Turkish Prime Ministry: Awarded stipend (2016 - 2020)

## Skills

|                  |  |
|------------------|--|
| General          | Teamwork, Technical Writing, Software & Databases, AI and Machine Learning, Data Science |
| Programming      | Python, MATLAB & Simulink, SQL, Java, LATEX, Assembly, VHDL                              |
| Libraries        | NumPy, Pandas, Scikit-Learn, SciPy, PyTorch, TensorFlow, Gym, Ray, Pillow                |
| Tools & Software | Linux, ROS, Git, Docker, VS Code, EAGLE, MS Office                                       |
| Languages        | English (Fluent), French (Fluent), German (Beginner), Turkish (Native)                   |

## Projects

|   |  |
|---|--|
| 2020 - 2021<br>Summer Semester          | <b>Mobile Robotics in Disaster Scenarios</b><br>Institute of Man-Machine Interaction at RWTH Aachen University<br><br>Authored a <a href="#">review article</a> for the seminar course <i>Current Concepts and Trends in Robotics and Simulation Science</i> .   |
| 2019 - 2020<br>Winter - Summer Semester | <b>Accompanying Humans and Achieving Designated Tasks with Autonomous Mobile Robots</b><br>Industrial Design Bachelor's Project<br><br>Developed an <a href="#">autonomous land robot</a> using <b>YOLO</b> and <b>LIDAR</b> for human tracking and obstacle evasion, and programmed with <b>ROS</b> for <b>Gazebo</b> simulation. |
| 2017 - 2018<br>Summer Semester          | <b>Hand Gesture Controlled Remote Car</b><br>Microprocessors Course Project<br><br>Designed and developed a <a href="#">4WD remote car</a> controlled via hand gestures, utilizing <b>Bluetooth</b> communication with <b>NXP FRDM-KL25Z</b> and <b>Arduino Nano microcontrollers</b> .  |
| 2017 - 2018<br>Winter Semester          | <b>Rotating Object Detector</b><br>Digital Design Course Project<br><br>Developed <a href="#">a mechanism</a> with <b>BASYS 3 FPGA</b> board programmed with <b>VHDL</b> detecting objects within a range.   |