# Umut Aslan

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Mechatronics Engineer and Master's student in Robotics & Intelligent Systems with a strong foundation in Deep Learning and Embedded Systems. Currently driving digitalization projects at BSH Türkiye, bridging the gap between Industry 4.0 concepts and practical factory implementation. Passionate about developing AI-driven solutions for autonomous systems, control systems and embedded systems.

## EDUCATION

**Master's Degree** in Robotics and Intelligent Systems — ***Sep 2024 – Present***
Turkish German University — Istanbul

Bachelor's Degree *in* **Mechatronics** Engineering — ***2019 – 2024***
Marmara University — Istanbul

**42 Istanbul (**Piscine) – Software Education — ***Aug 2024 – Sep 2024***

## WORK EXPERIENCE

***Digitalization*** Master Project Student — ***Aug 2025 – Present***
**BSH Türkiye** — **Cerkezkoy, Türkiye**

- Driving the **digital transformation** roadmap. Collaborating with Industry 4.0 Leads to implement mainly **AI and Data Analytics** solutions within the Dish Care and Cooking production divisions.
- Developing specialized **Computer Vision** models and AI algorithms to automate quality control and optimize manufacturing processes.

***Operational Technologies*** Intern (Long Term) — ***Feb 2024 – June 2024***
**Toyota Boshoku Türkiye** — Sakarya, Türkiye

- Spearheaded Digital Transformation initiatives within the industry 4.0 scope, transitioning factory operations from paper-based workflows to digital systems.
- Developed and trained a **YOLO-based Computer Vision** model to automate quality control for improving defect detection efficiency in **robotic welding** processes.
- Utilized Python and Deep Learning techniques to perform visual inspections.

*R&D Intern* — ***Oct 2023 – Feb 2024***
**QPFace Information Technologies** — Istanbul

- Designed a custom Octocopter drone and integrated specialized sensors for explosive detection.
- Conducted R&D on explosive detection systems, designing an odour-sensing mechanism.
- Leveraged Fusion 360 for rapid prototyping and mechanical design of drone components and sensor housings.

*Research Intern* — ***July 2022 – Sep 2022***
Marmara **MEMS**/NEMS/MOEMS Lab — Istanbul

- Fabricated MEMS based pressure sensors from Graphene and Carbon-Nanotube. Achieved higher sensitivity and resistance ranges compared to standard industrial sensors.
- Implemented data acquisition pipelines using ESP32 and Arduino to integrate sensors into wearable devices.

## SKILLS and INTERESTS

**AI & Computer Vision |**Deep Learning, Machine Learning, Image Processing, YOLO, OpenCV.
**Programming** | Python, C, C++, MATLAB, Simulink.
**Embedded Systems & PLC** | STM32, Arduino, ESP32, Siemens S7-300/400.
**Mechanical Design & Analysis** | Fusion 360 (CAD/CAM/FEA), SolidWorks.
**Languages |** Turkish (Native), English (C1).
**Parlak Gezegen (Sci-Fi Novel) |** Authored and published the science fiction novel 'Parlak Gezegen'.
**Chess |** Licensed player, Türkiye Chess Federation.