

Erkam Tuna Bayoğlu

CONTACT INFORMATION

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EDUCATION

TUBITAK Science Highschool

September 2022 - present

Aka College Bahçelievler Istanbul

September 2019 - June 2022

WORK EXPERIENCE

TUBITAK BILGEM Mechanical Workshop

Intern

November 2024 - Present

- Covering Basic Mechanical Engineering Fundamentals. (Fracture mechanics, Fatigue of Materials, alloys etc.)
- Learning about manufacturing processes.
- Working with CAD/CAM on SolidWorks.

Xynaptics Firm

Intern Programmer

July 2024 - Present

- Developing AI products for client companies.
- Working primarily with Python, APIs, and databases.

TUBITAK MARTEK Robotics R&D Unit

Intern Programmer

October 2023 - May 2024

- Studied on encoders, ROS (specifically Noetic).
- STM32 coding using STM32CubeIDE.

PROJECTS & COMPETITION

First Robotics Competition (FRC)

Team Founder & Team Captain

2025

- Halic Regional Quarter Finals.
- Bosphorus Regional Quarter Finals.

Team Founder & Team Captain

2024

Programming Lead

2024

- Qualified for world finals at USA.
- Marmara Regional Winner award.
- Wrote code for swerve drive kinematics and odometry, autonomous and subsystems.
- Managed integration of hardware and software systems.
- Gave lessons about robotics to our school.

Underwater Unmanned Vehicle

Programming Lead

2022 - present

- Developed a unmanned underwater vehicle.

- Used Matek H743 for the control system and Raspberry Pi 4B for the computing system.
- Placed 7th in 2024 at TEKNOFEST Turkey finals.

Photolaser

Project Lead

2023 - Present

- Designed a cost-effective photogate system using phototransistors and 5V red lasers.
- Programmed an Arduino to calculate object speed based on the time between triggering two phototransistors.
- Utilized photoblock material for easy assembly and a fixed sensor distance for speed calculation.
- Currently working on enhancing the design with a railway system and specialized trains to demonstrate collisions.

Fighter UAV Competition

Programmer

2025 - Present

- Programming a UAV for automatically following other UAVs.
- Main specialization in visual detection of planes and path planning.

Detection of Hate Speech on the Web Using AI (TUBITAK 2204/A Project)

Programmer

2024 - Present

- Developed a Chrome extension for detecting and filtering inappropriate messages.
- Works on platforms like WhatsApp, Instagram, Reddit using AI.
- Implemented a choice between using an API-based (LLM) or running a local model for message analysis.
- Planned future improvements to support all websites and moderate YouTube video comments.

Remote-Controlled Vehicle Using Cloud

Self Project

2024 - Present

- Developed a remote-controlled robot car using AWS cloud services for internet-based control.
- Built the website interface and backend using JavaScript, HTML, and CSS.
- Utilized AWS IoT, Lambda, VPC, API Gateway, and MQTT for cloud-side communication.

RELEVANT
SKILLS

General Purpose Languages

Proficient: Java, Python

Familiar: C++, Kotlin

Web Development

Familiar: PHP, Javascript, HTML, CSS

Database

Proficient: MySQLi, Amazon DynamoDB

Familiar: MSSQL Server, Amazon Aurora

CAD/CAM

Familiar: Onshape, SolidWorks

CERTIFICATIONS
& AWARDS

AWS Miul Bootcamp

November 2024

FRC Marmara Regional Winner

March 2024

Teknofest UUV Finalist

2023 & 2024

TUBITAK 4004 Certificate of Participation

September 2021

URFODU Math Competition Silver Medal

May 2020

FLL 2020 Researcher Award

February 2020

Caribou Contest World 1st

January 2020

Turkiye Math Competition Silver Medal

2020

TALES Math Competition

2019

CodeweeK Certificate of Participation

2019

PMI (Project Management Institute)

October 2024 - November 2024