

# Seyit Kubilay ULUÇAY

+90 555 140 32 48 | [kubilay.ulucay@ozu.edu.tr](mailto:kubilay.ulucay@ozu.edu.tr) | [linkedin.com/in/kubilayulucay](https://www.linkedin.com/in/kubilayulucay) | [ulucay.org](http://ulucay.org)

Çekmeköy, İstanbul, TURKEY

## EDUCATION

### Özyeğin University

İstanbul, TURKEY

*B.Sc. in Electrical and Electronics Engineering, Minor in Computer Science*

*2021 – Present (Expected: [2025])*

- Cumulative GPA: 2.92 / 4.00
- Honors: 50% Performance Scholarship

### Uğur College High School

Kocaeli, TURKEY

*High School Diploma*

*2017 – 2021*

- Grade: 94.10 / 100.00

## EXPERIENCE

### BEKO R&D Advanced Sensor Technologies

İstanbul, TURKEY

*Intern, R&D Department*

*July 2024 – Aug 2024*

- Contributed to the development of a gap and newly patented floor detection system for an electric robot vacuum using STM ToF sensors.
- Focused on implementing sensor-based power management to optimize cleaning performance across different floor and carpet types while avoiding getting stuck in any situation to perform continuous cleaning.
- Gained hands-on experience with sensor integration, data analysis, and R&D processes in a corporate environment.

### Özyeğin University, Faculty of Engineering

İstanbul, TURKEY

*Undergraduate Assistant*

*Mar 2023 – June 2023*

- Provided hardware support for the newly opened Autonomous Driving course, assisting students with NVIDIA Jetson Nano based vehicle conversions.
- Assisted teams in assembling and troubleshooting hardware, facilitating practical learning and problem-solving.

### Özyeğin University, Student Services

İstanbul, TURKEY

*Part-timer, Student*

*June 2023 – Sep 2023*

- Assisted students with inquiries regarding transfers, minor/major applications, and enrollment processes.
- Developed and implemented a Microsoft Power Automate workflow for course assignments, reducing manual processing time by approximately 50%.

## PROJECTS

### Remote-Controlled Axial Flux Motor

Arduino, NRF24, ESC, AutoCAD, 3D Printing, Custom PCB

- Designed, built, and tested a custom, electric-powered axial flux motor (including hand-wiring coils) in only 2 months as a two-person team.
- Implemented a custom remote controller using NRF24 wireless modules.

### Wind Turbine Grid Integration Analysis

PowerWorld Simulator

- Analyzed the impact and cost-effectiveness of different wiring configurations for grid integration of wind turbines.
- Utilized PowerWorld for detailed system modeling, analysis, optimization, and documentation.

### PLC Automation Systems

Schneider EcoStruxure Control Expert

- Developed and programmed automation logic for a simulated traffic light system to reduce waiting time optimally and created a functional toy claw machine.
- Gained practical experience in PLC programming, ladder logic, and industrial automation concepts.

### Servo Actuated 3-Axis Gimbal

Arduino Nano, MPU6050 IMU, Servos (MG996R), I2C, 3D Printing

- Co-designed and built a 3-axis (Roll, Pitch, Yaw) gimbal using modified 3D models and servo motors.

- Developed Arduino code to calibrate and process raw data from an MPU6050 IMU via I2C connection.
- Mapped processed IMU data to control servo positions for stabilization, overcoming challenges with a defective initial sensor.

### Machine Learning in Finance: Bitcoin Market Analysis

Python, Pandas, Scikit-learn (BART), Matplotlib

- Investigated the correlation between daily Twitter volume and Bitcoin market fluctuations using the BART model, finding a positive correlation.
- Performed time-series analysis and prediction.

### Zumo Robot Object Detection & Counting

Arduino (C++), Zumo Platform, IR Sensor, Reflectance Sensors

- Co-developed an algorithm for a Zumo robot to navigate a defined area, detect obstacles using IR/reflectance sensors, and count them.
- Implemented system logic for multi-angle scanning to improve accuracy and user notification via LED/buzzer.
- Successfully demonstrated functionality in various scenarios, identifying limitations in edge case detection.

### Deforestation Analysis & Solution Proposal

Research Methods, Statistical Analysis, Presentation Tools

- Researched causes, consequences (environmental/socio-economic), and existing solutions for deforestation in Turkey's Black Sea region.
- Analyzed and presented statistical data related to deforestation trends and impacts.
- Collaborated on proposing an "Industrial Forest Project" as a sustainable, long-term solution.

## TECHNICAL SKILLS

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**Languages:** Turkish (Native), English (Fluent), German (Beginner)

**Software Languages:** Python, Java, C, C++, MATLAB, Arduino C/C++

**Software & Tools:** LTSpice, MATLAB, Simulink & Simscape, Schneider EcoStruxure (PLC), PowerWorld, NI LabVIEW, KiCad, Microsoft Power Automate, MS Office Suite

**Hardware:** STM Time-of-Flight (ToF) Sensors, STM32 Boards & Sensors, NVIDIA Jetson Nano, Arduino, Raspberry Pi, Electronics Lab Equipments

**Areas of Interest:** Power Energy Systems, Sustainable Technologies, Electric Vehicles, Electric Motors, Electronics Design, Control Systems, Automation, Robotics

## LEADERSHIP & EXTRACURRICULAR ACTIVITIES

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### IEEE Özyeğin University Student Branch

Istanbul, TURKEY

*President of the Supervisory Board (2024-Pres), Chairman (2023-24), RAS Board Member (2022-23), RAS Crew (2021-22)* *2021 – Present*

- Hosted major IEEE events: 2021 TR RAS Congress and 2023 ComSoc Summit at Özyeğin University.
- Significantly increased annual branch activity, growing event numbers from 4 to 23 within two years.
- Expanded club membership substantially from 103 to 652 members over two years.

### Özyeğin University

Istanbul, TURKEY

*Peer Advisor* *2024 – Present*

- Guide newly enrolled students through their academic journey and university life, providing support and resources.

### Özyeğin University Clubs Joint Volunteer Event

Istanbul, TURKEY

*Volunteer* *Apr 2023*

- Volunteered to welcome and engage with children affected by the 2023 earthquake.

### Robotics Competitions

Kocaeli, Turkey

*Competitor & Captain* *2019 - 2020*

- KELEBEKRO 19 (Gebze Technical Univ.): 1st Place - Mini Sumo Robot Category
- İTÜRO 2019 (Istanbul Technical Univ.): 2nd & 3rd Places - Micro Sumo Robot Category

### Uğur College Model United Nations (MUN) Team

Kocaeli, TURKEY

*Member* *Sep 2019 – June 2020*

- Represented different countries, researched international issues, and collaborated to propose solutions.