YUSUF ZİYA ÇAKMAK

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EDUCATION

Kocaeli University, Kocaeli, Turkey   2017 — 2021
Bachelor's degree in Mechanical Engineering   GPA: 3.27
Coursework: System Dynamics, Numerical Methods, Heat Transfer

Kocaeli University, Kocaeli, Turkey   2018 — 2021
Mechatronics Engineering, Double Major   Not Completed
Completed coursework: Electronics, MATLAB Programming, Computer Vision, Engineering Mathematics
Note: Transitioned to full-time engineering position in final year

EXPERIENCE

SAYKAL ELECTRONICS   Kocaeli, Turkey
Software Engineer   Nov 2023 - Present

- Developed many host applications using Windows Presentation Foundation (WPF) and MVVM pattern for various industries including automotive, defense and beverage service industries.
- Executed the transition to TI (Texas Instruments) Direct Supply by developing the in-house purchasing API and front-end.
  Utilized ASP.NET MVC, WebAPI, Entity Framework, AWS EC2
- Architaced real-time data collection, data visualization and software update host applications from embedded systems using CANBus, TCP/IP, serial and MQTT communication protocols.
- Designed desktop applications by using DevExpress, SyncFusion controls and Material Design guidelines.

OTOKAR AUTOMOTIVE AND DEFENCE   Sakarya, Turkey
Military Vehicles Software System Engineer   Sep 2023 - Nov 2023

- Prepared HIL and PIL test scenarios for 4x4 and 6x6 military vehicles.
- Assisted to migration from in-house HIL computer to NI PXI Systems.
- Collaborated between sub-system, wiring and software teams.

HEXAGON STUDIO   Kocaeli, Turkey
Software Engineer   Mar 2022 - Aug 2023

- Designed and developed electric vehicle diagnostics user interfaces with Windows Presentation Foundation (WPF) for aftersales and EOL (End of Line) commissioning activities.
- Built a calibration and snooping application based on CCP(CAN Calibration Protocol) for an in-house ECU.
- Reverse engineered the CCP communication flow used by a third-party flashing tool through CAN bus traffic analysis. Used the identified protocol inefficiencies to significantly optimize our calibration tool's implementation.
- Worked closely with Embedded Software Team focusing around R155/R156 regulations software security.
- Architected a software signing server to ensure the integrity and downgrade protection of vehicle software.
- Utilized C#(WPF,WinForms), MVVM, CANalyzer, Python, Cryptography and Git

LEADERSHIP AND VOLUNTEER EXPERIENCE

KOUSTECH AUTONOMOUS SYSTEMS TEAM   Kocaeli, Turkey
Product Owner & Team Member   Jan 2021 – Aug 2022
Led UAV manufacturing process and coordinated team activities as Product Owner. Performed mathematical modeling of UAV subsystems and contributed to TUBITAK-funded antenna tracker system development.

YARBAY REFIK CESUR PRIMARY SCHOOL   Kocaeli, Turkey
Robotics Instructor, Volunteer   Mar 2019 – May 2019
Taught electronics and robotics fundamentals to elementary students as part of Erasmus project, developing hands-on activities to engage students in STEM education.

PROJECTS

Numerical Solution of Snowmelt 📄   2021
Mechanical Engineering Graduation Thesis, Supervisor: Prof. Müslüm Arıcı
Developed analytical and numerical solutions for snowmelt modeling using heat equation and Neumann's Problem framework. Proposed a numerical algorithm and implemented the solution in Python. Analyzed temperature distribution in homogeneous medium during phase change with specified initial and boundary conditions.

Antenna Tracker System 📄   2021

TUBITAK 2209-A Project, Supervisor: Dr. Haluk Özakyol

Designed antenna tracking system for providing high-efficiency communication between the ground-aircraft or aircraft-satellite in unmanned aerial vehicles. Developed dynamic control model enabling integration of various antenna types. Incorporated IP camera module for visual monitoring and expandability to image processing-based tracking.

Solution of 1D Heat Equation with Numerical Methods 📄   2020

Mechanical Engineering Thermal Design Project, Supervisor: Dr. Özgür Kaplan

Conducted comparative analysis of finite difference methods for solving one-dimensional heat conduction equation. Evaluated accuracy of various numerical schemes by comparing results against analytical solutions. Calculated error rates and determined optimal numerical method for heat transfer problems under specified boundary conditions.

CERTIFICATIONS

Automotive Cybersecurity Engineering Fundamentals   2025

Mindshift to Excellence GmbH

- Introduction to ISO 21434 - Road vehicles Cybersecurity Engineering
- ISO 24089 - Software Update Engineering Cybersecurity Concept Development
- UNECE WP.29 Regulations 155 & 156 - Cybersecurity and Software Update Management
- Vulnerability Analysis - Identification, Assessment and Management

Cybersecurity Engineering Excellence   2025

Mindshift to Excellence GmbH

- TARA (Threat Analysis & Risk Assessment) - Methodology and Implementation
- Cybersecurity Attack Methods - Threat Vectors and Defense Strategies
- Verification & Validation (V&V) - Security Testing and Compliance
- Penetration Testing - Professional Security Assessment Techniques

SKILLS & INTERESTS

- C# | WPF | Python | Matlab | C++ | OpenCV | Linux | AWS
- Cybersecurity | Programming Languages | Automotive | Computer Vision