

Korhan Erdoğan

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LINKS

[LinkedIn Profile](#), [GitHub Profile](#)

PROFILE

I am a final-year Computer Science and Engineering student at Sabancı University, expected to graduate in June 2026. Through internships, academic projects, and personal work, I have gained hands-on experience in software development, full-stack applications, databases, and AI-based solutions. I am a fast learner with strong analytical and problem-solving skills, and I am eager to begin my career in a dynamic environment where I can keep learning, adapt quickly, and contribute to impactful technology projects.

EDUCATION

Sept 2021 — Present	Bachelor of Computer Science and Engineering, Sabancı University	İstanbul / Turkey
Feb 2023 — Present	Finance Minor, Sabancı University	İstanbul / Turkey
Feb 2024 — Jul 2024	Bachelor of Computer Science and Engineering / Erasmus, Johannes Kepler Universität Linz	Linz / Austria

INTERNSHIPS

Jul 2025 — Sept 2025	Full-Stack Software Engineering Intern, Cybersoft	İstanbul
	Project: KYC Live Interview — secure, real-time video verification	
	<ul style="list-style-type: none">Built a full-stack real-time KYC interview system connecting customers on Flutter mobile and operators on React web through WebRTC.Developed Spring Boot backend services for session management, authentication, authorization, and REST API integration.Implemented end-to-end session flows with clear state management, guided user actions, and consistent messaging.Integrated WebRTC and Socket.IO for stable real-time communication and predictable signaling between clients.Improved reliability with reconnect handling, state preservation, resource cleanup, and debugging of edge-case failures.Enhanced user experience through clearer error paths, informative loading states, and predictable join/leave behavior.Supported deployment and local development using PostgreSQL, Docker, Docker Compose, and NGINX over HTTPS.Validated the system across real devices, emulators, and major browsers, reducing connection issues and improving completion flow.	
Jul 2024 — Sept 2024	Machine Learning and Artificial Intelligence Intern, Netcad Software Inc.	İstanbul / Turkey
	<ul style="list-style-type: none">Developed an AI-powered segmentation platform using SAM, LangSAM, and FastSAM to automate building and tree segmentation from high-resolution satellite imagery.Applied SAM and SAM2 for image segmentation, focusing on automatic mask generation, model behavior, and parameter tuning.Improved satellite-image segmentation performance through hyperparameter tuning and text-prompt-based targeting of urban features with LangSAM.Combined FastSAM box prompts with LangSAM and transformed geographic coordinates into image coordinates for more precise object-level segmentation.Enabled TIFF and GeoJSON export for integration with GIS-based urban planning and environmental monitoring workflows.Expanded technical knowledge in computer vision, CNNs, Vision Transformers, NLP, and YOLOv8 through hands-on research and implementation.Built a strong foundation in AI-driven geospatial analysis by integrating multiple deep learning models into a scalable segmentation workflow.	

Aug 2023 — Oct 2023

Web Development intern, SPT Elektronik Para ve Ödeme Hizmetleri A.Ş.

İstanbul / Turkey

- Built a foundation in frontend development with HTML, CSS, and JavaScript, while expanding into backend technologies to strengthen full-stack skills.
- Improved programming fundamentals through advanced C++ and data structures coursework completed during summer school.

PROJECTS

Sept 2025 — Jan 2026

EchoSpaceAR: Visual and Spatial Simulation of Sound for Deaf or Hard of Hearing (DHH) Users

İstanbul / Turkey

- Built an AR accessibility prototype in Unity for Meta Quest 2/3 and Android platforms.
- Developed a system that transforms environmental sounds into real-time visual-spatial cues for Deaf and Hard of Hearing users.
- Worked with real-time microphone input, audio buffering, log-mel spectrograms, and YAMNet-based sound classification for sound detection.
- Contributed to the AR HUD pipeline by mapping detected sounds into directional, urgency-based, and category-based visual indicators.
- Applied HCI principles to design a low-clutter, usability-focused interface.
- Supported pilot testing through logging and analysis of reaction time, localization accuracy, latency, and stereo issues.

Sept 2025 — Jan 2026

Multilingual Online Polarization Detection System

İstanbul / Turkey

- Developed a multilingual online polarization detection system using Python, PyTorch, Hugging Face Transformers, and scikit-learn.
- Built and compared multiple NLP approaches including TF-IDF + Logistic Regression, CLSTM, BiLSTM with Attention, XLM-RoBERTa, mDeBERTa, InfoXLM, RemBERT, and mGPT.
- Applied text preprocessing, tokenization, and cross-lingual training to handle multilingual social media data across diverse languages.
- Implemented focal loss and weighted sampling to address class imbalance and improve robustness on challenging language distributions.
- Integrated ensemble learning techniques to combine transformer model predictions and strengthen overall multilingual classification performance.

Jun 2025 — Jun 2025

Sentiment Analysis on IMDB Reviews using Machine Learning and Deep Learning Models

İstanbul / Turkey

- Developed a sentiment analysis system on 50,000 IMDB reviews using classical ML, deep learning, and transformer-based approaches.
- Performed exploratory data analysis to evaluate class balance, review length, and word frequency patterns for preprocessing design.
- Built tailored preprocessing pipelines for TF-IDF-based models, ANN, and fine-tuned BERT.
- Evaluated Naive Bayes, Logistic Regression, ANN, and BERT using macro F1, precision, recall, accuracy, confusion matrices, and PR curves.
- Contributed to ANN development, hyperparameter tuning, overfitting mitigation, and technical reporting.
- Delivered a complete experimentation workflow in Google Colab and identified BERT as the strongest model, with Logistic Regression as a scalable baseline.

Sept 2024 — Jan 2025

Full-Stack Online Shopping Platform

İstanbul / Turkey

- Developed a responsive full-stack e-commerce platform with role-based functionality for customers, sales managers, and product managers.
- Built the system with Node.js, React.js, Bootstrap, and MongoDB, supporting scalable backend, frontend, and database operations.
- Implemented key features including product browsing, cart management, secure payments, and dynamic search and sorting.
- Developed real-time inventory updates, return and refund workflows, and role-specific operations across ordering, pricing, and product management.
- Added real-time notifications for invoices and wishlist-based discount updates.
- Improved security through sensitive data protection and role-based access control.
- Used Git and Jira for collaborative development and project tracking.
- Conducted testing to validate usability, scalability, and reliable operation for concurrent users.

Sept 2024 — Dec 2024

Cloud-Based File Storage and Sharing System Using TCP Sockets

İstanbul / Turkey

- Developed a client-server file storage and sharing system in Python using TCP sockets for real-time communication.
- Built a multi-threaded server supporting concurrent clients and file upload, download, update, and deletion operations.
- Implemented persistent storage for files and metadata to maintain data across application restarts.
- Designed server and client GUIs for monitoring connections, managing file operations, and improving usability.
- Added error handling for duplicate client names, unauthorized access, and invalid file requests.
- Enabled reconnection workflows to maintain uninterrupted file access.
- Improved scalability for large transfers and multi-client workloads through efficient communication and file handling.
- Strengthened skills in network programming, multithreaded systems, file management, and GUI development.

Sept 2024 — Dec 2024

Digital Library Management System

İstanbul / Turkey

- Developed a scalable library management system for multi-branch operations, covering book management, member records, loans, fines, and reservations.
- Designed a relational database schema with 10 interconnected entities, including Book, Member, Author, Publisher, and Branch.
- Implemented multi-branch borrowing and return workflows with branch-specific operations.
- Built SQL triggers and stored procedures to automate processes, enforce policies, and preserve data integrity.
- Developed the BorrowBook stored procedure with validation, error handling, and transaction rollback support.
- Created a web module for borrowing and reservation actions with real-time validation.
- Automated fine tracking for overdue loans and tested the system across different usage scenarios.
- Used SQL and Python to strengthen database design, backend logic, and system integration skills.

Dec 2024 — Dec 2024

Developed a Real-Time Support System with Firebase Integration

İstanbul / Turkey

- Developed a real-time support system for communication between users or guests and administrators.
- Built user and admin interfaces for issue-based messaging, real-time responses, and centralized support management.
- Integrated Firebase Realtime Database and Firebase SDK for instant message synchronization across interfaces.
- Enforced data privacy through Firebase security rules, limiting users to their own messages while allowing full admin access.
- Improved usability with issue-selection menus, timestamped messages, and dynamic updates.
- Tested the system for real-time reliability, privacy, and admin accessibility, and documented the implementation in a technical report.

Feb 2024 — Jun 2024

Speech Command Detection System For Smart Home Devices

Linz / Austria

- Developed a speech command detection system for smart home devices using machine learning and deep learning approaches.
- Collected and analyzed a diverse audio dataset of spoken words and everyday scenes, improving quality through Python-based validation and bias analysis.
- Built classification pipelines for k-NN, Random Forest, and CNN models to distinguish keywords from unrelated sounds.
- Used GridSearchCV and Weights & Biases for hyperparameter tuning and achieved 94.6% validation accuracy with the CNN model.
- Applied sliding-window detection, post-processing, and data augmentation to improve performance on longer real-world audio recordings.
- Evaluated the system under realistic noise and speaker conditions, strengthening robustness and identifying areas for further optimization.

Mar 2023 — Jan 2024

Rate my Professor App

İstanbul / Turkey

- Developed a Java-based Android application for students to evaluate and review professors.
- Designed a user-friendly interface for submitting and viewing instructor feedback.
- Added real-time feedback functionality to keep evaluations current and relevant.

Mar 2023 — Jan 2024	Social Media Activity	İstanbul / Turkey
	<ul style="list-style-type: none"> Collected and analyzed Instagram data using web scraping and Python. Performed exploratory data analysis to identify patterns in social media behavior and engagement. Visualized complex datasets to communicate findings clearly. Applied machine learning techniques to analyze trends and support data-driven insights. 	
Mar 2022 — Jun 2022	Autonomous Smart Farming	İstanbul / Turkey
	<ul style="list-style-type: none"> Researched smart farming technologies to identify innovation opportunities in agriculture. Explored computer vision and deep learning approaches for autonomous crop monitoring and health management. Examined the integration of machine learning and robotics to reduce human intervention in farming processes. Focused on automated solutions designed to improve efficiency and productivity in agriculture. 	
Jan 2019 — Jul 2019	Edible package	Sydney / Australia
	<ul style="list-style-type: none"> Developed an edible packaging solution aimed at reducing plastic waste in space environments. Won first place in the Innovation Solution Award at Macquarie University, Sydney. Presented and discussed the concept with NASA in relation to its potential use in space missions. 	

SKILLS

- Programming: Java, JavaScript, TypeScript, Python, Kotlin, SQL, C++
- Frontend: React.js, Next.js, HTML, CSS, Bootstrap
- Backend & APIs: Spring Boot, Express.js, REST APIs, Authentication & Authorization
- Databases: PostgreSQL, MySQL, MongoDB, Firebase
- Tools & Practices: Git, Docker, Docker Compose, NGINX, Jira, Agile/Scrum
- AI / ML: TensorFlow, PyTorch, scikit-learn, Hugging Face Transformers
- Mobile / Real-Time: Flutter, WebRTC, Socket.IO
- Core Strengths: Fast Learning, Adaptability to New Technologies, Teamwork, Strong Research Skills, Analytical Thinking, Problem Solving

LANGUAGES	Turkish	Native speaker	English	Highly proficient
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UNIVERSITY CLUB ACTIVITIES

Nov 2023 — Jan 2024	Budget Manager at ALGOTHON Club, a branch of Sabancı IEEE CS Society.	İstanbul / Turkey
Oct 2021 — May 2023	University Basketball Team Player	İstanbul / Turkey