

Kadir Talha Uncu

Electrical and Electronics Engineering Student

Isparta, Türkiye

+90 539 720 88 21

kadirtalhauncu@gmail.com, [GitHub](#), [LinkedIn](#)

PROFILE

- I am a third-year Electrical and Electronics Engineering student. I focus on improving myself in the fields of software development, mobile application development, and artificial intelligence. I am interested in programming, problem-solving, and learning new technologies. I aim to develop my technical skills by applying my theoretical knowledge to real-world projects and to add value to engineering projects.

EDUCATION

- Aydın Adnan Menderes University** 09/2023 – 06/2028
- Electrical and Electronics Engineering Bachelor's Program (English) (3rd Year)

PROJECTS

Hedgehog Notes | Android Note-Taking App (Google Play)

- Developed a note-taking app for the Android platform in Java, implementing note adding, editing, and deletion (CRUD) operations with a local SQLite database.
- Developed the app using Android Studio and AI-assisted code editors and published it on the Google Play Store.
- Technologies: Java, Android, SQLite, Android Studio
- Google Play: <https://play.google.com/store/apps/details?id=com.hedgehognotes.app&hl=tr>

ADM District-Based Electricity Fault Prediction System | Ege Career Fair 2026 Hackathon (4th place)

- Cleaned ~367,000 electricity outage records from the 2021–2024 period using Python (Pandas, NumPy) and built a complete time series for 49 districts.
- Designed a 28-feature feature engineering pipeline including lag, rolling window, and seasonal variables by collecting historical and current weather data through Open-Meteo API integration.
- Developed a 7-day fault risk prediction using an ensemble model (classification + regression) combining LightGBM and CatBoost algorithms; achieved 89% AUC-ROC and 74% F1 score with a chronological train/test split.
- Designed a dynamic risk scoring algorithm based on district-level z-score normalization.
- Developed a multi-page, interactive web dashboard with Streamlit and Plotly featuring a risk map, district detail analysis, and model performance visualizations.
- Technologies: Python, Pandas, NumPy, LightGBM, CatBoost, Scikit-learn, Streamlit, Plotly, REST API, Time-Series Feature Engineering

Zone Intrusion Detection | Real-Time Computer Vision-Based Security System (İmverge – Ege Career Fair 2026)

- Developed a computer vision security system based on YOLOv8 that detects, in real time, the entry of individuals not wearing personal protective equipment (PPE) into designated restricted zones.
- Trained a custom YOLOv8 model for helmet and vest detection over 50 epochs, achieving 88% mAP50 accuracy; built a dual-model architecture by combining it with the pre-trained YOLOv8n person detection model.
- Designed an interactive interface with OpenCV that allows users to draw square, triangular, and rectangular restricted zones and to move and resize them via drag-and-drop.
- Built a multi-channel alert system that sends an audible alarm, an on-screen warning, and an instant photo notification via the Telegram Bot API upon a violation.
- Generated Turkish reports that automatically summarize violation events through Groq API (LLaMA 3.1) integration.
- Prevented latency in the video stream by processing notifications with background-running threads.
- Technologies: Python, YOLOv8, Ultralytics, OpenCV, NumPy, Pillow, Telegram Bot API, Groq API, pygame
- GitHub: https://github.com/talhauncu/zone_intrusion_detection

Livra | Live Streaming Platform (Aydın Youth Summit 2026 – Hackathon Aydın, 4th place)

- Single-handedly designed and developed a real-time live streaming platform, similar to Twitch and Kick, with web and mobile clients running on a shared backend.
- Developed the web client with React 18 and Vite, and the mobile client with Flutter and Riverpod; used Firebase Authentication and Cloud Firestore for authentication, database, and real-time synchronization.
- Built peer-to-peer video streaming from scratch with WebRTC instead of using a ready-made service; using Cloud Firestore as the signaling channel, implemented single-broadcaster-to-many-viewer live streaming that works identically on web and mobile.
- Solved low-level details such as ICE candidate queuing, reconnection management, and concurrency control.
- Developed real-time chat, a follow system, and a category-based discovery screen; wrote domain-based Firestore security rules following the least-privilege principle.
- Built a server-side system that sends instant notifications to followers via Firebase Cloud Messaging using Cloud Functions when a followed broadcaster goes live.
- Technologies: React 18, Vite, Flutter, Riverpod, Firebase (Authentication, Cloud Firestore, Cloud Functions, Cloud Messaging), WebRTC
- GitHub: <https://github.com/talhauncu/Livra>

TECHNICAL SKILLS

- Programming: Python, Kotlin, Dart
- Artificial Intelligence & Machine Learning: LightGBM, CatBoost, ensemble modeling, YOLOv8, Ultralytics, OpenCV (computer vision)
- Data Science: Pandas, NumPy
- Mobile Development: Android, Flutter
- Cloud / Backend: Firebase (Authentication, Firestore, Cloud Functions, Cloud Messaging)
- Database: SQLite, Microsoft SQL Server (MS SQL), Firebase Firestore
- Tools & Others: Git/GitHub, Android Studio

LANGUAGES

- Turkish: Native
- English: B2 (Upper-Intermediate)