AHMET CAN ÇITAK

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ABOUT

I work in artificial intelligence and data science, with a particular focus on LLM, RAG, and production-oriented applications. Using FastAPI, PostgreSQL/pgvector, Supabase, and React/TypeScript, I build end-to-end AI-powered products. My projects include a RAG-based question-answering assistant that generates responses through semantic search over documents and web sources, a smart building automation platform developed under TÜBİTAK 2209-A, and a health-focused classification study built with machine learning algorithms that has been published academically. I also carry out hands-on workflows in NLP and computer vision, covering data processing, model development, evaluation, and improvement. My goal is to deliver scalable, high-impact AI solutions to real-world problems.

SKILLS & TECHNICAL COMPETENCIES

- Python (Upper-Intermediate), C# (Intermediate), TypeScript/JavaScript (Basic to Intermediate)
- Machine Learning, Deep Learning, Model Evaluation and Optimization
- NLP, LLM, RAG, Semantic Search, Text Processing
- Computer Vision, Image Preprocessing, Classification, Object Detection
- Data Science, EDA, Data Cleaning, Feature Engineering, Data Visualization
- FastAPI, Node.js, Express, REST API, JWT
- PostgreSQL (pgvector), Supabase, MySQL, SQL
- Git, GitHub, Docker, Jupyter, Swagger/OpenAPI, pytest
- B1 Level English

EDUCATION & EXPERIENCE

- **Karabük University | Karabük, Türkiye**
  Bachelor's Preparatory Program (English) | 2022
- **Selçuk University | Konya, Türkiye**
  B.Sc. in Computer Engineering | 2026
- **Intern Engineer / Software Development**
  Hetabil Yazılım Bilişim ve Danışmanlık Ltd. Şti. | 2025
- **Student Assistant**
  Selçuk University, Faculty of Technology | 2025-2026
- **Intern Engineer / Artificial Intelligence - LLM**
  Orion Twin | 2026

PROJECTS

- **Smart Building Automation Platform (TÜBİTAK 2209-A Program)**
  In this project, I am developing a holistic AI-assisted automation infrastructure to improve building efficiency, primarily for municipal service buildings. The system is built with a Flutter client, a FastAPI-based service layer, PostgreSQL data architecture, and role-based authorization flows.
- **AI-Powered Personalized Nutrition Recommendation System (R&D Phase)**
  Under the TÜBİTAK 1002-A process, I am developing a platform that generates personalized nutrition recommendations by considering health profiles and dietary constraints, using an ETL pipeline, PostgreSQL + VectorDB, a rule-based system and a RAG architecture.
- **Cargo Pilot - Load Optimization Platform**
  A web platform that digitalizes and optimizes cargo loading planning processes. Serving as the Backend Chapter Lead in this project, I spearheaded the development of the .NET 8-based API architecture, database optimizations, and system integrations.
- **RAG-Based Question-Answering Assistant (Full-Stack)**
  I developed a web application that extracts meaningful information from user-uploaded documents and web sources (such as Stack Overflow and Wikipedia) and provides answers in natural language. Using Python and FastAPI, I designed the document processing and embedding pipeline, and established semantic search and question-answering services on ChromaDB. I benchmarked and integrated various Large Language Models (LLMs) into the project.
- **Obesity Levels Classification (Academic Publication)**
  I developed a health-oriented classification model using Random Forest, XGBoost, and CatBoost algorithms. The study has been turned into an academic publication.

- **Banking Churn Prediction (Ensemble)**
  As part of the ING Hubs Turkey Datathon, I developed an end-to-end machine learning pipeline for customer churn prediction. I integrated XGBoost, LightGBM, and CatBoost models using an ensemble approach, applying data preprocessing, model comparison, and performance evaluation steps.
- **AI-Powered Password Manager**
  I developed a modern password manager using React 19, Supabase, and Gemini AI. I implemented end-to-end features including secure password storage, password strength analysis, AI-powered strong password generation, searching/filtering, and a responsive interface.
- **Image Processing Studio (AI Preprocessing Lab)**
  I developed a web-based application using NumPy, Pillow, and Gradio that combines classical image processing and AI-focused data preprocessing steps into a single interface. I implemented filtering, morphological operations, edge detection, batch pipeline management, and pre-model preprocessing presets (CNN/mobile) in the application.
- **Turkish Recipe Bot - RAFT Pipeline**
  I developed an end-to-end Python-based pipeline for domain-specific data collection, cleaning, and data preparation in the RAFT format, tailored for Turkish food recipes. I automated the steps of data collection with Selenium, text conversion, and JSONL generation, creating a training infrastructure ready for LLM fine-tuning.
- **Traffic Accident Risk Analysis (EDA + ML)**
  I developed an ML study that predicts driver error risk and includes performance comparisons using K-Means and Logistic Regression after EDA + data preprocessing on a Kaggle dataset.
- **AI & C# Projects Collection**
  I developed mini-projects in the C# and .NET ecosystem focusing on artificial intelligence, optimization, and decision support. I conducted algorithmic problem-solving and performance comparison processes by creating practical implementations of methods such as A* (8-Puzzle), Genetic Algorithm, PSO, ABC, and Fuzzy Logic within the collection.
- **Real Estate Agency Web Application**
  I developed a full-stack application focused on real estate listing management with an Express-based REST API and a multi-page web interface. I implemented listing creation/management workflows, MySQL data modeling, file upload processes, and API documentation components with Swagger/OpenAPI in the project.
- **Konya Interactive 3D Game Experience**
  As Team Lead for the Konya-themed interactive 3D experience project, I managed technical planning, task allocation, and the coordination of the development process. I managed the sprint workflow between the software and digital art teams in integrating JavaScript, Three.js, and WebGL-based scene interactions.
- **Sportlink Mobile Backend**
  As a Developer in the backend team, I contributed to the Node.js/Express/TypeScript mobile backend development process, focusing on Supabase integration, JWT auth, Swagger documentation, Jest testing, and Docker deployment steps.
- **Deep Learning, Machine Learning, and Data Science Projects**
  I developed applications based on ANN, CNN, RNN, and LSTM for image processing and text classification using TensorFlow, Keras, and PyTorch; additionally, I conducted end-to-end Python-based workflows in regression, classification, clustering, dimensionality reduction, model selection, data preprocessing, and model evaluation.

CERTIFICATIONS

- **Miuul:** Machine Learning, Feature Engineering, Python Programming for Data Science, Miuul Machine Learning Camp
- **Turkcell / Geleceği Yazanlar:** Introduction to Data Science and Artificial Intelligence (2024), Deep Learning 201 (ANN) / 301 (CNN) / 401 (RNN) / 501 (LSTM)
- **BTK Akademi:** Python with Machine Learning, Python for Data Science and TensorFlow (2023), Introduction to Deep Learning with Keras, Introduction to Natural Language Processing, Customized GPTs, Applied Kaggle
- **AI Business School:** Aygaz Machine Learning Bootcamp: Next-Generation Project Camp, First Step into Artificial Intelligence

REFERENCES

- **Assoc. Prof. Dr. Murat KÖKLÜ**
  Vice Co-Chair of the Department of Computer Engineering, Faculty of Technology, Selçuk University
- **Assoc. Prof. Dr. Ahmet Cevahir ÇINAR**
  Faculty of Technology, Selçuk University & Sentius Technology Software