Cüneyt Şahin

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Professional Summary

My primary focus as a developer is in **Machine Learning, AI, and Computer Vision**. While I heavily rely on Python for building data models, **computer vision pipelines**, LLM tools, and automation scripts, I am also experienced in crafting complete desktop experiences using QML and Python. I thrive on building end-to-end solutions—whether that means training predictive models for complex data systems or delivering custom, practical software for real-world applications.

Education

Ankara Yildirim Beyazit University — Ankara, Turkey
Bachelor of Science in Computer Engineering — *September 2023 – June 2027 (Expected)*
GPA: 3.10 / 4.00

Experience

Undergraduate Student Researcher — November 2025 – Present
Ankara Yildirim Beyazit University — *Ankara, Turkey*

- Developing **LearningCoachApp**, an educational platform funded by the ISKUR Workforce Program.
- Integrated local **LLM**s and applied **Machine Learning** concepts to enable privacy-first AI assistance.
- Spearheaded the **Mobile App Development** process, creating a cross-platform interface connected to the AI.
- Collaborated with academic supervisors to define system architecture and project milestones.

Freelance Software Developer — January 2024 – Present
Remote / Self-Employed

- Delivered custom software automation solutions for clients, focusing on efficiency and workflow optimization.
- Developed **Python** scripts and desktop tools to automate repetitive data entry and processing tasks.
- Managed the full software lifecycle from requirement gathering to final delivery and client support.

Projects

Credit Card Fraud Detection System | [GitHub] | **[LIVE DEMO]** — January 2026
Stack: Python, XGBoost, Scikit-learn, Pandas, NumPy, Streamlit

- Engineered a hybrid decision system benchmarking traditional **Rule-Based Algorithms** against **XGBoost** AI models to optimize detection.
- Solved the class imbalance problem (0.17% fraud rate) using **SMOTE** technique, improving recall by 40%.
- Performed extensive data preprocessing and feature engineering using **Pandas** and **NumPy** on large datasets.
- Deployed an interactive web dashboard with **Streamlit** to visualize confusion matrices and real-time predictions.

IoT Predictive Maintenance & Fault Detection | [GitHub] | **[LIVE DEMO]** — December 2025
Stack: Python, Scikit-learn, Isolation Forest, Pandas, NumPy, Matplotlib

- Engineered an **IoT-based predictive maintenance system** that analyzes high-frequency sensor telemetry (via MQTT/CoAP) to forecast machinery failures.
- Implemented **Isolation Forest** to autonomously detect deviations in vibration and acoustic patterns.
- Generated actionable insights through **Matplotlib**, mapping spectral density and vibration spikes to failure.

Acoustic-Vision-Fused-Autonomous System | [GitHub] — March 2026
Stack: Python, CNN, OpenCV, Librosa, Edge AI, IoT

- Developed an autonomous point intervention system using acoustic spectroscopy and multimodal computer vision for early pest detection (TÜBİTAK 2242 Research Project).
- Implemented Short-Time Fourier Transform (STFT) via **Librosa** and **CNN** models to analyze soil acoustic data, cross-validated with visual stress indicators using **OpenCV**.
- Designed an **Edge AI** architecture to run offline inference locally on microcontrollers (ESP32/Raspberry Pi), triggering a targeted biopesticide pump with sub-2-second latency.

Computer Vision Classroom Analytics Tool | [GitHub] — April 2026
Stack: Python, OpenCV, Computer Vision, AI Models (antelopev2)

- Built an automated classroom attendance and seating analysis system utilizing advanced **Computer Vision** techniques.
- Integrated state-of-the-art AI models like **antelopev2** to track student presence and spatial patterns in real-time.
- Optimized classroom management workflows through intelligent visual data processing for smart educational environments.

Technical Skills

Languages: Python, Java, C++, SQL (PostgreSQL), QML
AI & Data Science: OpenCV, Scikit-learn, XGBoost, CNN, Pandas, NumPy, Librosa, imbalanced-learn, Ollama
Frameworks & Libraries: FastAPI, Qt (PyQt/PySide), Selenium, Playwright, Requests
Developer Tools: Git, GitHub, Linux, Vercel, n8n, Edge AI (ESP32/Raspberry Pi)
Spoken Languages: Turkish (Native), English (Intermediate)

Certifications

Machine Learning with Python | *BTK Akademi*
Introduction to Deep Learning | *BTK Akademi*
Introduction to Data Science | *BTK Akademi*
Advanced Python Programming | *BTK Akademi*