

TUĞBERK AKSU

Computer Engineer

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OBJECTIVE

Highly motivated Computer Engineering graduate with strong hands-on experience in full-stack web development (Java, Spring Boot, React) and applied AI/ML (computer vision, deep learning). Proven ability to design scalable software architectures and integrate complex data systems, backed by professional experience in high-tech and R&D projects. Strong problem solver with a track record of developing end-to-end solutions from system backend to user interfaces. Adapts quickly to agile environments, blending technical rigor with cross-functional teamwork.

EDUCATION

Bachelor of Engineering in Computer Engineering
TOBB University of Economics and Technology

August 2020 – August 2026

High School
MATFEN High School

September 2016 – June 2020

WORK EXPERIENCE

Candidate Engineer - GETEK Elektronik A.Ş

May 2026 - Present

- Developed the Monitick Digital Signage management panel, utilizing React for the interactive frontend and Java / Spring Boot for the scalable multi-tenant backend.
- Engineered the graphical user interface (GUI) for the physical edge devices (screens) using the Qt framework, ensuring high-performance content rendering.
- Established robust, real-time bidirectional communication between the management backend and remote Qt clients using RESTful HTTP APIs and WebSockets.
- Implemented secure user authentication, authorization, and data encryption mechanisms utilizing JWT and BCrypt.

Long Term Intern - Lentatek Uzay Havacılık ve Teknoloji A.Ş

September 2025 - January 2026

- Developed a real-time 3D Flight Tracking Software for Unmanned Aerial Vehicles (UAVs) utilizing Java and the NASA WorldWind SDK
- Designed and implemented critical functional modules for the Ground Control Station (GCS) software, including layer management systems, live coordinate tracking, and dynamic camera control modes
- Integrated high-resolution GeoTIFF satellite imagery and topographic data into the system architecture, enabling high-accuracy geospatial data processing on digital maps

Long Term Intern - Creas Technology Software & Consulting

January 2025 - April 2025

- Developed and trained an end-to-end Deep Learning system for automated spare part recognition for a major domestic vehicle manufacturer.
- Architected custom model pipelines to streamline inventory management and part identification, reducing manual processing time
- Engineered a scalable social media analysis platform using React.js and JavaScript, focusing on high-performance data visualization.

PROJECTS

FoMAC: AI-Driven Football Analytics & Automated Commentary Platform

- Engineered a comprehensive computer vision pipeline using YOLO and BoT-SORT to perform real-time multi-object tracking (MOT) of players and the ball from single-camera broadcast footage.
- Implemented advanced spatial mapping techniques, including camera calibration, Player Re-Identification (ReID), and dynamic 2D minimap generation for precise field localization.
- Developed a deep learning-based action spotting module utilizing SoccerNet datasets and NetVLAD++ temporal pooling to automatically extract key match events (e.g., goals, fouls).
- Integrated a Large Language Model (LLM) combined with a custom Text-to-Speech (TTS) engine to synthesize context-aware, real-time audio commentary.
- Designed the full-stack infrastructure with an asynchronous FastAPI backend and an interactive web dashboard, containerizing AI inference modules with Docker for scalable deployment.

Flight Radar: Real-Time Air Traffic Monitoring System

- Engineered a highly scalable backend architecture using Java and Spring Boot, strictly adhering to SOLID principles and Object-Oriented Design (OOD) for a microservices-ready environment.
- Designed a high-performance multi-threading infrastructure to concurrently process live flight telemetry and handle asynchronous data streams efficiently.
- Developed and deployed robust RESTful API endpoints to ensure seamless, low-latency data flow between the backend services and the frontend visualization layer.
- Architected the data persistence layer utilizing a relational SQL database, optimizing queries for rapid data retrieval and reliable storage of historical flight records.

Automated Arbitrage & Financial Tracking System

- Developed an automated financial tracking tool to monitor cross-platform asset arbitrage opportunities and calculate real-time profit margins.
- Engineered dynamic data pipelines to aggregate market data from multiple trading platforms, optimizing investment return analysis.
- Designed a comprehensive tracking architecture to evaluate portfolio performance and enable data-driven financial decision-making.

SKILLS

Languages:	Java, C/C++, Python, JavaScript, Verilog
Web Tech:	React, HTML/CSS, UI/UX Design
AI & ML:	Deep Learning, NLP, Computer Vision, LLM Integration
Hardware:	FPGA, RISC-V, ESP32, Embedded Systems
Frameworks & Libraries:	PyTorch, OpenCV, Scikit-learn, NumPy/Pandas, Qt, React, Spring Boot
Tools/DevOps:	Docker, Ubuntu/Linux, Git, Agile

LANGUAGES

Turkish (Native), English (B2 Level, TOEFL ITP: 532), German (A2 Level, TELC: 54.5)