

ALPER BUBER

AI Engineer & Full-Stack Developer

Yalova, Türkiye • (+90) 534 054 70 52 • alperbuber800@gmail.com • linkedin.com/in/alperbuber

AI engineer and full-stack developer who takes ideas from concept to production — LLM agents, RAG pipelines, and industrial computer vision, along with the web platforms that put them in front of real users. Currently leading a company-wide Company GPT initiative at a 1,000-person manufacturer, and building the RAG knowledge-base layer of an EU-funded (FFplus / EuroHPC) research project running on the MareNostrum 5 supercomputer.

CORE SKILLS

AI / ML: LLM Agents, Multi-Agent Orchestration, RAG & Agentic RAG (LangGraph), MCP, Text-to-SQL, Fine-tuning (LoRA / PEFT), Embeddings & Chunking Pipelines, Vector Databases (Qdrant, pgvector, ChromaDB), vLLM, PyTorch, YOLO, OpenCV, OCR, HPC (EuroHPC / MareNostrum 5)

Backend: Python, FastAPI, C# / .NET 8, Entity Framework, Node.js, Express, Prisma, PostgreSQL, MSSQL, MySQL, Redis, Hangfire, BullMQ, SignalR, Socket.io, JWT, REST APIs

Frontend: React, Next.js, TypeScript, Vite, Tailwind CSS, d3.js

Other: SQL, Git, Docker, Linux, on-premise & cloud VPS deployment, BPM (Paperwork), ERP integration (CANIAS, SAP, IFS)

EXPERIENCE

Software Engineer — Benoplast

Jul 2025 – Present • Yalova, Türkiye

- Leading Benoplast's Company GPT initiative — BenoAI, an enterprise AI platform for a 1,000-person plant that unifies ERP data, quality and HR documents, and business processes behind a single conversational interface, with an orchestrator agent routing each question to specialist agents across five isolated MCP servers.
- Delivered TTO AI, the production pilot of that vision: an agentic, MCP-based assistant that turns plain-Turkish questions into safe, transparent SQL over operations data, replacing a ticket-and-wait reporting loop that used to take days.
- Built an end-to-end computer vision system across three synchronized industrial cameras for real-time crate detection and counting, integrating YOLO-based detection, OCR, and barcode reading into a single production-line pipeline.
- Develop the Trento operations portal — a .NET 8 / React B2B platform with multi-step approval flows, permission-scoped data access, two-way CANIAS ERP synchronization, and real-time notifications over SignalR.
- Led the digital transformation and automation of manual business processes using BPM methodologies (Paperwork, C#, JavaScript), and manage process integrations and data flows on MSSQL across internal systems.

Software Developer Intern — Tersan Shipyard

Jul 2023 – Aug 2023 • Yalova, Türkiye

- Developed responsive internal web interfaces with React, integrating data from the IFS ERP system through RESTful APIs; built reusable components and collaborated via Git.

Data Engineer Intern — Gantek Technology

Jul 2022 – Aug 2022 • Istanbul, Türkiye

- Worked with MySQL for querying and managing relational databases; participated in ETL/ELT processes extracting, transforming, and loading data across systems.

PROJECTS

TTO AI — Enterprise AI Assistant for Operations Data — Agentic assistant that answers plain-Turkish questions over operations data: it builds the query itself, runs it against the database, and shows the SQL it used. Built on a machine-readable knowledge catalog distilled from a 51-table, 605-column schema, guarded by a 7-layer SQL safety stack verified with 309 unit tests, and served through an MCP tool server so new data sources plug in without touching core code.

Python · FastAPI · Agentic AI · MCP · Claude API · MSSQL · React · d3.js · .NET 8

BenoAI — Company-Wide Company GPT — Enterprise AI platform in development for a 1,000-person manufacturing plant. An orchestrator agent decomposes each question — including ones chaining multiple sources — and routes it to specialist agents: text-to-SQL for ERP data, vector-search RAG for quality and HR documents, a BPM agent for process state, with every claim in the synthesized answer sourced. Five independent MCP servers isolate the data sources, and AD-based access control, a semantic layer, and per-source evaluation sets are designed in from day one.

Multi-agent orchestration · RAG · MCP · Text-to-SQL · Semantic layer · Vector search · Python · FastAPI

AI-Powered Sustainable Façade Design — EU-funded (FFplus / EuroHPC) — Ongoing 15-month consortium project awarded 5,000 GPU hours on the MareNostrum 5 supercomputer, generating energy-optimized façade alternatives via a fine-tuned LLM coupled with thermal simulation. I build the RAG knowledge-base layer: a document-processing pipeline that turns technical building standards —

formulas, multi-part tables, symbol glossaries — into retrieval-ready, metadata-tagged chunks within a 512-token embedding budget, backed by an automated validation suite.

Python · Agentic RAG · LangGraph · Qdrant · pgvector · vLLM · Docling · Embeddings & Chunking

Trento Operations Portal — B2B operations management platform where three parties run their crate operations in a single system, each seeing only what its permissions allow. Multi-step approval flows on a .NET 8 Web API with per-step permission checks, state transitions, and notification rules; two-way CANIAS ERP synchronization on Hangfire background jobs; real-time updates over SignalR. Redesigned the return flow around a single source of truth for authorization — per-record permission flags returned from the API, so the UI never re-implements the same rules.

.NET 8 · Entity Framework · MSSQL · React · Hangfire · SignalR · JWT · CANIAS ERP

Multi-Camera Crate Detection & Counting System — Real-time computer vision system for an industrial production line — YOLO-based detection, OCR, and barcode reading orchestrated across three synchronized camera streams to prevent cross-view double-counting.

Python · YOLO · OpenCV · OCR

Entrepreneurship Crowdfunding Platform — pitstart.cc — Full-stack crowdfunding simulation live in production: role-based access, JWT auth, phase automation, and WebSocket-powered live funding with real-time investment streams and leaderboards. Deployed on a Linux VPS.

React · TypeScript · Node.js · Prisma · PostgreSQL · Redis · BullMQ · Socket.io

EDUCATION

B.Sc. Computer Engineering — Muğla Sıtkı Koçman University

2019 – 2024 • 100% English-taught program

Thesis: Virtual Reality Based Earthquake Training and Simulation System developed with Unity.

CERTIFICATIONS & AWARDS

- TÜBİTAK 2209-A Research Funding — VR Earthquake Training & Simulation System (2024)
- Introduction to Data Science — Koç University (2025): ML foundations, regression, classification, clustering, dimensionality reduction

LANGUAGES

Turkish — Native • English — Professional working proficiency (B2)