Ömer Aydın

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About Me

Product-minded Senior Software Engineer, focused on backend architecture and agentic AI. Experienced in agent orchestration, prompt development, and dataset-driven LLM evaluation with Langfuse. Previously a founding engineer on nmaistro.ai, where I architected backend microservices and built the MCP integration layer from scratch. I enjoy solving complex system challenges, building high-performance software, and taking existing systems apart to understand how they work.

Experience

Software Engineer Feb. 2026 – Present
Tangany GmbH *Munich, Bavaria, DE*

- Proposed and built an agentic AI system to automate AML source-of-funds and source-of-wealth checks after Tangany onboarded Nexo, a large digital asset platform. Designed it to handle the extra compliance work from rapid customer growth without hiring dozens of additional AML analysts.
- Implemented its multi-agent pipeline with **Vercel AI SDK** and Azure-hosted models in **Microsoft Foundry**. The agents use Mistral and Azure Document Intelligence for OCR and structured extraction, then call tools to assess customer evidence using blockchain transactions, historical prices, and AML rules.
- Created the system's LLM evaluation workflow in **Langfuse**, using benchmark datasets and experiments to test extraction and assessment, catch regressions, and compare prompt versions. Used experiment results to improve prompts and traces to debug individual agent runs.
- Defined the analyst workflow and built a **React/TypeScript** dashboard backed by PostgreSQL for reviewing automated assessments and investigating cases through AI chat.
- Contributed to custody backend services and REST APIs with **Node.js, TypeScript, and NestJS**, including automated testing and Azure CI/CD.

Senior Software Engineer Jan. 2025 – Feb. 2026
NewMind AI *İstanbul, TR*

- Served as a founding engineer on nmaistro.ai, an agentic AI orchestration platform with natural language workflow creation, dynamic artifacts, and 200+ built-in MCP integrations. Architected the backend microservices and worked on the AI agent runtime, designed and built the entire MCP integration layer from scratch. Partnered on system design and tech-stack decisions, decoupling core services for post-MVP scalability.
- Led R&D and backend architecture across AI-driven legal tech products, guiding multiple teams through complex system design, optimization, and implementation.
- Architected distributed microservices and data pipelines that significantly improved system scalability, resilience, and developer productivity across the platform.
- Designed and built a custom Elasticsearch access-control plugin in Java & Go, scaling to millions of permission checks across millions of legal documents, leveraging RoaringBitmaps and low-level engine integrations for sub-millisecond access validation.
- Developed a modular ETL and knowledge graph builder in Node.js/TypeScript, transforming diverse legal datasets into large-scale Neo4j graph structures with automated schema generation and CLI-driven workflows.
- Mentored junior developers, established engineering standards, and drove internal tooling and automation that accelerates delivery across R&D teams.

Software Engineer Jun. 2022 – Dec. 2024
NewMind AI *İstanbul, TR*

- Contributed to the core development of AI-powered legal tech platforms, building scalable backend systems and integrating complex data pipelines for global law firms and enterprises.
- Designed and implemented microservices in Node.js/Nest.js and Go, using Kafka, Elasticsearch, and GraphQL to enable efficient, event-driven communication and data retrieval at scale.
- Led major refactors and modernizations, including the migration from legacy PHP monoliths to microservice architectures, cutting load times and improving maintainability across multiple products.

- Enhanced system performance through advanced database optimizations in PostgreSQL, MongoDB, and Redis, reducing query times and improving throughput.
- Collaborated closely with frontend and mobile teams to deliver end-to-end product features, contributing to improved UX and faster delivery cycles.

Mobile Application Developer Feb. 2022 – Jun. 2022
NewMind AI *İstanbul, TR*

- Led the development of a cross-platform Flutter application for internal time tracking for lawyers and staff, improving operational efficiency and transparency across teams.
- Collaborated with backend teams to design and implement custom API endpoints, ensuring optimal mobile performance.
- Integrated third-party services like Firebase Cloud Messaging for real-time notifications and Google Sign-In for secure authentication.
- Managed the full app lifecycle from design and development to deployment on app stores to deliver a stable and intuitive product under tight timelines.

Software Developer Sep. 2017 – Feb. 2022
Freelance *Worldwide*

- Delivered custom Android applications for international clients using Java and Kotlin, focusing on performance, clean architecture, and long-term maintainability.
- Built and deployed backend services with Node.js and PHP, managing server operations, databases, and scaling for production environments.
- Developed automation scripts and data tools in Python, including web scrapers and API integrations to streamline client workflows.

Skills

Languages & Frameworks: Node.js, Nest.js, JavaScript, TypeScript, Java, Go, Python, Kotlin, Android, Flutter, React Native, Bun, Hono, Fastify, tRPC, React.js, Tailwind
Databases & Queues: MySQL, PostgreSQL, MongoDB, Redis, Elasticsearch, Couchbase, Kafka, ClickHouse, CockroachDB, RabbitMQ, Neo4j, Memgraph
APIs & Protocols: REST, GraphQL, gRPC
Agentic AI: MCP, A2A, AG-UI, Vercel AI SDK, Agno, Mastra, LangChain, Langfuse, RAG, Vector Databases
Developer Tools: Docker, Kubernetes, Git, Linux, GitLab CI/CD, GitHub Actions, Vite
Cloud & Services: Azure, GCP, Cloudflare, Firebase
Spoken Languages: English (Fluent), Turkish (Native)

Education

İstanbul University - Cerrahpaşa Graduate
Bachelor's Degree in Computer Engineering

Projects

Dexter | *Java, Kotlin, Android* Sep. 2021 – Present

- Developed an open-source DEX/APK editor and reverse-engineering platform for Android, earning 150+ GitHub stars from the security research community.
- Used Smali and Dexlib2 for low-level Android bytecode manipulation and analysis, supporting security research and vulnerability assessment.
- Integrated five industry-standard decompilers (JADX, Fernflower, CFR, JD-Core, Procyon) with custom optimizations for on-device Java decompilation and real-time code analysis.
- Implemented syntax highlighting, Smali navigation, and real-time error detection, with an extensible architecture for future APK reconstruction and Java bytecode assembly.

Personal Website | *TypeScript, Bun, Hono, Vite, Cloudflare* Mar. 2024 – Present

- Developed a high-performance static site generator in TypeScript using Bun and Hono, with Vite for build optimization.
- Engineered a type-safe content management system with structured TypeScript models, compiling Markdown content into static HTML.
- Built a GitHub Actions CI/CD pipeline for automated testing, builds, and deployment to Cloudflare Pages.