

Emre YILDIZ

Tech Lead | Software Architect | Agentic AI Engineer | Functional Programming

Izmir, Turkey | emre.yildiz.dev@hotmail.com

Portfolio: techmr.org | linkedin.com/in/emre-yildiz-297ab0242 | github.com/emre-yildiz-dev

Summary

Tech Lead and Software Architect, 9+ years shipping production software — now leading a **10-engineer team** on an enterprise billing platform: its agentic layer and the architecture under it.

Engineer **agentic AI** as an architectural boundary, not a bolt-on: bounded agent loops, human-in-the-loop approval, automated evaluation, cost and safety guardrails, and observability — failures caught, capped, and explainable.

Functional programming is what makes agents deterministic and auditable: **Effect-TS** typed effect systems and **Functional Core / Imperative Shell** boundaries that keep decision logic pure and side effects at the edges — the discipline behind a ground-up **390+ table PostgreSQL** rewrite.

Range from event-driven backends to mobile across TypeScript, .NET, Python, and Rust. Specialize in **agentifying legacy and greenfield applications** robustly and deterministically.

Work Experience

Team Lead / Senior Software Engineer

Jan 2026 – Present

RecVue (Efsora Client Engagement)

Remote

- Led a **10-engineer** team building and integrating an agentic-AI layer (**Socket.IO** + webhooks) into RecVue's enterprise revenue & billing platform ("Orion") — recvue.com
- Architected **Agent Studio: LangGraph** multi-agent orchestration (10 graphs, 43 nodes) with a custom **Event Shell** agent harness — bounded ReAct loop, **human-in-the-loop**, circuit breakers, and orphan recovery
- Built an **LLM evaluation framework** (heuristic + **LLM-as-judge**), **cost tracking with budget guardrails**, and full **OpenTelemetry** observability (6 Grafana dashboards) with Postgres-checkpoint conversation memory
- Architected a **ground-up rewrite** on **Effect-TS**, replatforming off a legacy **Oracle** system to a new **390+ table PostgreSQL** model (14 schemas), **332 HTTP API groups**, a Postgres-outbox **event-driven** core, and a **Kafka** agent edge
- Delivered the Gartner demo**, validating the platform for analyst and customer use cases

Software Architect / AI Engineer

Sep 2025 – Present

Efsora

Remote

- Built an **automated codebase-auditing system** combining deterministic analyzers with AI tooling; audited client codebases including **RecVue**, **QuPos**, and **Vave Health**
- Designed a reusable **Functional Core / Imperative Shell (FCIS)** monorepo template & library adopted as the standard across Efsora client projects
- Built a **PRD-to-Project AI agent** that turns a detailed PRD into a full, deployed GitHub project from scratch — **presented at Cota Connect, Silicon Valley**
- Built a **fully-automated SDLC system** (Insights → PRD → UX → Epics → Stories → Development → QA → CI/CD); shipped **7 applications** (mobile, web, backend) in **7 weeks**

Software Architect

Dec 2025

AllSober (Efsora Client Engagement)

Remote

- Architected the application and domain model for a clinic **Electronic Medical Records (EMR)** platform
- Implemented it on a reusable **Functional Core / Imperative Shell** architecture with **Node.js** and **React**

Founder & Software Engineer

2025

Medivizi

Remote

- Founded and architected a multi-tenant **Occupational Health & Safety (OHS)** SaaS backend in **Rust (Axum)** with PostgreSQL **Row-Level Security** and **SQLx** compile-time-checked queries
- Built real-time features (WebSocket) and S3-compatible storage; delivered an admin dashboard with **HTMX** and Tailwind CSS

Tech Lead

2023 – 2024

BergX Software

Izmir, Turkey

- Led technical decisions and architecture design for multiple projects; mentored team members and conducted code reviews
- Built jrkripto.com crypto news, analysis, and education platform with **Next.js** frontend and **NestJS** microservices backend
- Implemented event-driven architecture with **Kafka**; leveraged **Redis** Pub/Sub and caching for real-time updates; designed **MySQL** with read replicas
- Scaled infrastructure with load balancing and horizontal service replicas to support **20,000+ active users**; centralized logging with the **ELK** stack
- Built DeFi dApps and a swap platform (**Next.js**, **Remix**) across Ethereum, zkSync Era, Arbitrum, Solana, Sui, and Aptos; authored staking/swap/vesting contracts (**Solidity**, **Move**, **Rust**) and CEX/DEX trading bots — one project reaching **\$25M+** volume on MEXC

Software Engineer

2021 – 2023

Gunkom Software

Izmir, Turkey

- Developed a **Flutter** iOS & Android app for **Magmaweld (Zaimoglu Holding)** with a **.NET 6** backend, connecting customers with welding masters
- Built a B2B e-commerce app with **Angular** and **ABP .NET** for Altinyildiz Classics, processing catalogs of **10,000+** products
- Supported *dijital.asistan*, a workflow-management platform for **Yasar Holding** – yasarbilgi.com.tr; delivered **48** features and **28** fixes, handling **65,000** workflows/year (**ASP.NET MVC**); upgraded the core framework from **.NET Core 3.1** to **.NET 6**

Senior Software Engineer

2017 – Present

Freelance / Contract

Remote

- **TyTDuel** – built an **AI-enabled** Turkish university-exam (TYT) competition app with **React**, **Bun**, and **Capacitor** (cross-platform mobile and web) – tytduel.techmr.org
- **ChessDuello** – built a cross-platform multiplayer chess app (**SwiftUI** on iOS/macOS, **Flutter** on Android) with a **Supabase/Deno 2/Hono/Drizzle** backend, real-time **WebSocket** match sync, and an offline-queue API layer; published on the **App Store** and **Google Play** – chessduello.com
- Built an **Angular** + **.NET** chess-management platform (puzzles, ratings, analytics, courses), a **FastAPI** web-scraping/analytics system for an AI analytics company, and a **Django** gym web app

Technical Skills

Agentic AI & LLM Engineering: LangGraph, Multi-Agent Orchestration, Agent Harness / ReAct Loops, Human-in-the-Loop, LLM-as-Judge Evaluation, Guardrails, LLM Cost Governance, MCP, LangChain, Pydantic AI, Amazon Bedrock, OpenRouter; Agent Tooling (Claude Code, OpenCode, Pi, BMad, superpowers, n8n)

AI Infrastructure & Data: RAG / GraphRAG, Knowledge Graphs, Context Graphs, Neo4j, pgvector, Weaviate, Vector DBs, Memory Systems, Self-Learning / Self-Healing, OpenTelemetry, Evaluation Frameworks, TensorFlow, PyTorch

Languages: C#, TypeScript, JavaScript, Python, Java, Rust, Solidity, Move, Swift, Dart, SQL, Bash

Backend: .NET 6, ASP.NET Core, Entity Framework, Node.js (NestJS, Express), Bun, Deno, Effect-TS, Drizzle, Django, FastAPI, Spring Boot, Axum

Architecture: Functional Core / Imperative Shell (FCIS), Event-Driven (Kafka, Postgres Outbox), Microservices, REST, GraphQL, gRPC, RabbitMQ, WebSocket, Caching

Frontend & Mobile: Angular, React, Next.js, Remix, Redux, React Query, Tailwind CSS, Material UI; Flutter, React Native (Expo), Capacitor, iOS (Swift / SwiftUI / UIKit), Android (Java)

Databases: PostgreSQL (large-scale schemas), MySQL (replication), MS SQL Server, Redis, MongoDB, CouchDB

Cloud & DevOps: AWS, Docker, Kubernetes, CI/CD (GitHub Actions), Linux, NGINX, HAProxy, ELK, Grafana/Prometheus

Blockchain: Ethereum, Solidity, Web3.js, Hardhat, Foundry, zkSync Era, Arbitrum, Solana, Aptos, Sui

Tools & Practices: Agile/Scrum, Jira, Confluence, Selenium, Puppeteer, Postman, VS Code, IntelliJ IDEA

Spoken: English – Professional

Projects

Agent Studio – Agentic AI Platform

2026 | LangGraph, Event Shell Harness, LLM-as-Judge Eval, OpenTelemetry, PostgreSQL

- Multi-agent orchestration platform (10 LangGraph graphs, 43 nodes) with a custom agent harness, LLM-as-judge evaluation, budget guardrails, a React Flow visual builder, and full observability

BuDekorKaçPara – AI Home-Renovation App

2026 | AI Image Generation, iOS & Android, dekor.techmr.org

- Founded and built a consumer AI app that renders a redesigned room from a photograph and estimates renovation cost for the Turkish market, then matches users to verified contractors; in store testing on iOS and Android

PRD-to-Project AI Agent

2025 | LLM Agents, Automated Code Generation, CI/CD

- Agent that generates and deploys a complete GitHub project from a detailed PRD; **presented at Cota Connect, Silicon Valley**

Automated Codebase Auditing System

2025 | Deterministic + AI Static Analysis

- Hybrid deterministic + AI auditing pipeline used to review production codebases including RecVue, QuPos, and Vave Health

Education

Ege University

Master of Science in Computer Engineering; Concentration: Distributed Systems

Izmir, Turkey

2024 – 2026

Celal Bayar University

Bachelor of Science in Computer Engineering; GPA: 3.32/4.00

Manisa, Turkey

2020 – 2024

Ahmet Yassawi University

Bachelor of Science in Computer Engineering; GPA: 3.81/4.00

Turkestan, Kazakhstan

2019 – 2022

Dokuz Eylul University

Associate's Degree in Computer Programming; GPA: 3.40/4.00

Izmir, Turkey

2016 – 2018