

Cosmin Andrei Albu

Fractional CTO | Senior AI Engineer | Tech Mentor

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Professional Summary

As a fractional CTO and senior software architect, I bridge high-performance engineering with digital growth. I build the infrastructure modern companies require to scale securely, automate processes, and validate business models. I turn ambitious ideas into robust solutions: from SaaS platforms and mobile apps to custom AI architectures and high-converting e-commerce. I don't just plan strategies; I implement the code that runs them. With a track record of over 21 delivered projects, my expertise spans scalable full-stack architecture (React, Next.js, Node.js, .NET), cloud infrastructure, and technical mentorship, having delivered over 2,000 hours of high-impact training to corporate teams and developers worldwide.

Key Achievements

- **Technical Leadership:** Directed technical vision and architecture for multiple startups, including Scout IP (AI patent analysis) and TicDrive (complete automotive ecosystem).
- **AI & Automation for Companies:** Developed custom AI solutions, RAG pipelines, and conversational avatars using state-of-the-art LLMs (OpenAI, Claude, Gemini). Automated manual processes using Python and n8n to help businesses recover up to 4 hours of daily operational time.
- **Proven Delivery:** Successfully architected and shipped 21+ projects spanning SaaS platforms, mobile apps, enterprise web applications, and B2B high-converting e-commerce systems.
- **Corporate Training & Mentorship:** Empowered B2B corporate tech teams and 160+ individual students worldwide through 2,000+ hours of custom technical training, maintaining a 4.9/5 satisfaction rating across 144+ verified reviews.
- **High-Performance Systems:** Built scalable enterprise-grade systems for clients like Avio S.p.A. and global brands via Hekanize, guaranteeing stability, security-by-design, and reliable CI/CD pipelines.

Technical Skills

- **AI & Automation:** Custom LLM Agents (OpenAI, Claude, Gemini), RAG pipelines, NLP, embeddings, Python, n8n, AI workflow automation, data mining, machine learning
- **Software Architecture & Cloud:** Scalable distributed systems, Docker, AWS (S3, Polly), Azure, CI/CD pipelines, DevOps workflows, system integration
- **Backend Engineering:** Node.js, Express.js, C# .NET Core, .NET 8, Laravel, Python, REST APIs, GraphQL, MQTT
- **Frontend & Mobile:** React, Next.js, TypeScript, Vue.js, Nuxt 3, React Native, Flutter, Tailwind CSS
- **Databases & Data Engineering:** PostgreSQL, MongoDB, SQL Server, Redis, Supabase, SQLite, Data Analysis, Excel
- **Growth & Digital Marketing:** Product-Led Growth (PLG), AAARRR framework, Technical SEO, GA4, GTM Server-Side, Google/Meta Ads attribution

Work Experience

CTO

Apr 2026 – Present

Scout IP (Startup accelerated at H-FARM) | Treviso, Italy (Hybrid)

- Lead technical direction for an AI-core startup, overseeing the entire technology stack from frontend and backend to cloud infrastructure.
- Architect and optimize complex AI pipelines for advanced Patent Analysis, leveraging deep learning models (PatentSBERTa) and LLMs.

Fractional CTO | AI & Growth Engineer

Mar 2024 – Present

Self Employed | Padua, Italy (Remote)

- Act as a technical leader bridging high-performance engineering with digital growth, building scalable infrastructure (React, Next.js, Node.js, .NET) and automating workflows.
- Architected and launched multiple full-scale platforms, including acosmy.com (a proprietary cloud-deployed SaaS e-learning platform) and TicDrive.
- Integrated custom AI architectures, RAG pipelines, and conversational avatars to eliminate operational bottlenecks for corporate clients.
- Applied advanced analytics (GA4, Server-side GTM) and high-tempo testing to validate business models and optimize e-commerce platforms.

Fractional CTO & Lead AI Architect

Sep 2025 – Present

LotoStudios (Freelance) | Turin, Italy (Remote)

- Built an embeddable 3D AI chatbot widget integrable into any website via a single script tag.
- Designed a robust RAG pipeline (automated web scraping, text chunking, OpenAI embeddings) deployed on a fully managed Node.js backend on AWS.
- Integrated dynamic text-to-speech engines (Amazon Polly) and built CI/CD pipelines for scalable cloud infrastructure.

Corporate IT Trainer

Feb 2026

Kinetikon | Italy (Remote)

- Designed and delivered a 20+ hour intensive B2B corporate bootcamp to upskill an internal team from absolute beginners to mastering algorithmic logic and C# Object-Oriented Programming (OOP).

Technical Mentor & Ambassador

Dec 2023 – Present

Superprof.it & Superprof.com | Worldwide (Remote)

- Recognized as a platform Ambassador, providing 1:1 mentorship and delivering over 2,000 hours of high-impact training to 160+ students, developers and professionals.
- Focused on real-world engineering practices, full-stack architecture, and advanced problem solving.

Senior Lead Frontend Developer

Sep 2024 – Apr 2025

Hekanize (Freelance) | Padua, Italy (Hybrid)

- Led a frontend team in building a modular enterprise web application using Vue.js 3, TypeScript,

Tailwind CSS, and Lit components.

- Managed task assignment, conducted code reviews, and independently architected complex features, taking full ownership from planning to deployment.
- Developed AI chatbot interfaces, SAML-based authentication flows, and reusable UI widgets, while occasionally contributing to the backend (Laravel) and infrastructure (Docker, AWS).

Full-Stack Development Trainer

Apr 2024 – Dec 2024

Istituto Formazione Franchi Srl | Florence, Italy (Remote)

- Designed and delivered custom 1-on-1 full-stack training programs (80+ hours), taking students from absolute beginners to deploying complete React and Node.js/MongoDB applications.

Frontend Developer

Sep 2024 – Feb 2025

Altura Labs Srl (Avio S.p.A.) | Rome, Italy (Remote)

- Developed a high-performance frontend architecture for an aerospace web application (Avio S.p.A.) using Nuxt 3 and Pinia.
- Integrated Directus BaaS to provide a flexible CMS, closely collaborating in an agile team to deliver scalable features.
- Implemented core performance optimizations and technical SEO best practices to ensure fast load times and high visibility.

Junior Full-Stack Developer

Oct 2022 – Mar 2024

FactoryMind | Trento, Italy (Remote)

- Developed and maintained large-scale B2B web applications, handling full-stack feature implementation using .NET Framework, Razor Pages, Vue.js, and SQL Server.
- Managed direct client communication to gather requirements and integrated CI/CD pipelines (Azure DevOps) for reliable production deployments.

Education

Digital Marketing & Growth Master

Sep 2025 – Feb 2026

Boolean Careers

- 6-month intensive program on acquisition architecture, Meta/Google Ads, Data Analytics, and B2B/B2C Sales Funnels.

Full-Stack Developer Program

Aug 2023 – Feb 2024

EPICODE Institute of Technology

- 6-month intensive MERN stack training.

Bachelor's Degree in Computer Engineering

Sep 2019 – Mar 2023

University of Padua

- Solid 180 ECTS foundation in computer science, information engineering, and applied mathematics.
- Main domains: algorithms, software engineering, databases, computer architecture, and AI.

Languages

Italian (Native), English (B2 - Reading and Listening), Romanian (B2)