

Cosmin Gagea

Software Engineer – Full-Stack Development & Applied AI

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PROFILE

Software engineer delivering end-to-end applications across healthcare, hospitality, enterprise automation and applied AI. Experienced in designing, building and deploying production systems using **Python, TypeScript/Next.js and Rust**. Comfortable owning architecture and implementation, while leading a small engineering team.

SKILLS

- **Languages:** Python, TypeScript/JavaScript, Rust, SQL, C/C++.
- **Full-stack & APIs:** Next.js, React, Axum, Leptos, Flask, FastAPI, REST, WebSockets, Diesel, Drizzle ORM.
- **AI / Data:** LLM agents (rig-core), RAG & reranking, OpenAI API (Realtime, vision), Gemini, Vanna AI, PostgreSQL, Redis, Qdrant, Neo4j.
- **Infrastructure:** Docker, Kubernetes (k3s), Jenkins, GitOps, Trivy, Vault, RabbitMQ, S3 storage, Ansible.

EXPERIENCE

SOFTWARE ENGINEER & TECH LEAD

Feb 2026 – Present

Romflex Sistem

- **Lead technical delivery** for a team of 4–5 engineers, including architecture, code reviews, engineering practices and stakeholder coordination.
- **Designed and developed a hospital radiation-dose monitoring platform** with Python, Next.js and Rust. Centralizes patient examination data, calculates radiation doses, tracks cumulative patient exposure and staff dosimeter readings, monitors imaging equipment status and produces CNCAN regulatory reports.
- **Built its Rust DICOM ingestion gateway** (Tokio, dicom-rs, RabbitMQ, MinIO, PostgreSQL): an on-prem C-STORE SCP with TLS and allowlists that receives studies from the hospital PACS as they are produced and streams them through an event-driven pipeline (object storage, transactional outbox, quorum queues, dose-extraction workers) with at-least-once delivery, idempotent upserts, circuit breakers, dead-letter quarantine and Prometheus/Grafana observability. Parses CT dose from RDSR and Siemens/GE vendor encodings. Deployed per hospital, with every site feeding one central platform concurrently over mTLS.
- **Built a voice-first AI front desk for a hotel** (Rust/Axum, PostgreSQL, React 19): lobby kiosk and phone receptionist handling check-in, walk-in, extend, checkout and room change in 5 languages. Developed the kiosk SPA and backend, the PMS microservice, passport/ID OCR with OpenAI vision and MRZ parsing, and a RAG concierge over Qdrant (93% hit@1). Integrated OpenAI Realtime, Gemini Live, LiveKit, Stripe, Twilio, WhatsApp.
- **Delivered a multi-tenant cold-outreach platform** (TypeScript, Next.js 15, PostgreSQL, Redis): owned its Kubernetes deployment (Jenkins, Trivy, GitOps, migration jobs, smoke tests) and built the bulk contact-import CLI, an LLM role-relevance classifier for enrichment and the migration of embeddings to OpenAI.
- **Built a production multi-agent system** for a public-sector institution, orchestrating AI agents and using Vanna AI to query a database with hundreds of tables through natural-language questions.
- **Developed a product-search chatbot** using a RabbitMQ ingestion pipeline, Qdrant vector search and Neo4j for product relationships.

SOFTWARE ENGINEER

Nov 2024 – Feb 2026

Lawren.AI

- **Built an end-to-end legal AI platform** using source-cited RAG across 18,000+ Romanian legal documents, from backend services and ingestion to frontend integration.
- **Designed hybrid document retrieval**, version-aware citations and quality evaluation using golden sets and regression checks.
- **Implemented real-time services, background processing and caching** using Rust, PostgreSQL, Redis, Qdrant and S3-compatible storage.

WEB DEVELOPER INTERN

Jun 2024 – Aug 2024

IFIN-HH

- **Developed two web-based scientific tools** for nuclear-physics workflows, translating mathematical models into software.
- **Automated document parsing and OCR** and validated computational results with researchers.

EDUCATION

M.SC. INFORMATION AND COMPUTER SYSTEMS ENGINEERING

Oct 2026 – 2028

Politehnica University of Bucharest – ETTI (expected graduation 2028)

B.SC. COMPUTER SCIENCE / SOFTWARE ENGINEERING

Sep 2022 – Jun 2026

Politehnica University of Bucharest – Faculty of Electronics, Telecommunications & IT (ETTI)

- **Relevant coursework:** Artificial Intelligence, Data Structures & Algorithms, Databases, Distributed Systems.

AWARDS

- **SIE Hackathon 2024 – 3rd place** (Politehnica University of Bucharest).
- **FIRST Tech Challenge 2019 – national champion** (~100 teams), world quarter-finalist in Detroit, USA.