Rouben Meschian

Software Architect · AI & Agentic Systems · Full-Stack

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Software architect and hands-on full-stack engineer with 20+ years designing, building, and modernizing enterprise data platforms. Comfortable across the stack and across data models — graph, document, and relational databases — with a track record of evolving legacy systems into modern architectures. An early and heavy adopter of AI-assisted engineering: spec-driven development with Claude Code, Copilot-driven modernization, and hands-on implementation of AI agents and custom Claude skills. Works fluently across a variety of programming languages and pairs strong systems thinking with clear communication that translates directly into precise specifications and high-leverage prompts.

CORE SKILLS

AI Engineering	Claude Code & spec-driven development, GitHub Copilot, AI agents, custom Claude skills, LLM-powered features (natural-language query, RAG over graphs)	**Architecture**	API & system design, distributed systems, offline-first sync & change replication, service decomposition, and modernizing legacy systems
Languages	TypeScript / JavaScript, Java, Python	**Databases**	A range across data models — graph & RDF stores, document (MongoDB), and relational (SQL Server, PostgreSQL); SPARQL, semantic web (RDF, OWL)
Full-Stack	Frontend frameworks & architecture, data visualization, backend services, REST APIs, data pipelines	**Leadership**	Technical strategy, architecture review, cross-team collaboration, mentoring & technical communication

EXPERIENCE

Founder & Architect — Palinomia

Apr 2026 – Present

Natural-language business-intelligence platform · independent product, in active development — sole architect & engineer

- Designed and built a natural-language BI platform end-to-end — non-technical operators ask plain-English questions of their own business data and get validated charts, KPIs, and interactive dashboards. Built entirely with Claude Code using spec-driven development — from spec to a functional end-to-end system in under 3 months.
- Implemented a Node.js/Express backend over a polyglot data layer: federated SQL across heterogeneous sources via Trino, a virtual RDF knowledge graph via Ontop, an Oxigraph triple store, and PostgreSQL — plus a Python FastAPI microservice for ontology alignment and ML-based entity resolution.
- Developed a backend AI agent that grounds every answer in the data: a tool-use loop generates queries and self-validates each cited figure against actual result rows, auto-repairing malformed model output. Provider-agnostic across Anthropic, OpenAI, and local models via Ollama, supporting on-prem / private-model deployments.
- Engineered for trust and operability: 3-pass query validation, per-request distributed tracing (OpenTelemetry), row-level security, and a 7-container Docker deployment with an automated CI/CD pipeline.

Consulting Engineer — Siemens Digital Industries Software

Jan 2026 – Present · Contract

Siemens Graph Studio (formerly Altair Graph Studio) — Agentic Enterprise portfolio

- Core full-stack engineer and frontend architect on an enterprise knowledge-graph platform (billions of RDF triples in production), continuing the same product following Siemens' acquisition of Altair.
- Steward the frontend framework, delta-tracking layer, offline-first sync, and change-replication system as the platform scales under Siemens.
- Build AI-agent integration and LLM-powered features, including Graph Studio Copilot and automated ontology generation.
- Drive AI-assisted modernization of the codebase — porting legacy JavaScript to modern TypeScript and standing up automated testing with Vitest (unit) and Cypress (end-to-end); active participant in technical strategy and architecture discussions across the engineering org.

Consulting Engineer — **Altair** — Apr 2024 – Jan 2026 · **Contract**

Altair Graph Studio — enterprise knowledge-graph platform

- Designed and built a purpose-built frontend framework managing the full client-side lifecycle of RDF data — fetching, in-memory storage, querying, and editing at enterprise scale.
- Architected an offline-first storage and sync system: local edits captured as deltas, persisted, then replicated and reconciled against the remote graph, with a dual-mode (local/remote) validation pipeline enforcing data integrity.
- Designed and implemented Altair Copilot — an LLM-driven natural-language interface over linked data that renders results as dynamic visualizations — and the Network Navigator for interactive graph exploration.
- Used GitHub Copilot heavily to accelerate modernization and refactoring; developed deep end-to-end system knowledge from SPARQL execution through client-side rendering, enabling effective collaboration across backend, data, and product teams.

Founding Software Engineer / Consultant — **Cambridge Semantics** — Apr 2007 – Dec 2023

Full-time (2007–2013), then contract (2013–2023) · Anzo · Boston, MA

- One of the founding engineers of Anzo — an enterprise data-management and analytics platform built around semantic-web technologies — across a 16-year tenure spanning the company from early stage through maturity.
- Led development of the client-side libraries, core infrastructure, and a pluggable application framework (AnzoJS) modeled after the Eclipse Rich Client Platform — the foundation on which all Anzo web applications were built.
- Worked across the full stack: frontend frameworks, backend services, RDF/SPARQL query systems, and data pipelines.
- Delivered numerous customer-specific projects for major enterprise clients including Johnson & Johnson, Staples, and Merck.

Consulting Engineer & Architect — **Cognaize** — Feb 2022 – Sep 2022 · **Contract**

AI-powered document processing

- Architected a document-processing system — a Node.js/Express backend with MongoDB and a Java microservice performing OCR on documents, deployed on AWS EC2.
- Built a document table-annotation feature (drag/resize of tables, columns, and rows, with row/column merging) for the core product.
- Optimized and refactored the application, taking it from effectively unusable to fast and responsive.

Consulting Engineer — **Haivision** — Dec 2018 – Jan 2020 · **Contract**

Enterprise video streaming

- Developed the frontend of a video-streaming management product, including a layout editor for composing custom multi-region content streams.

Consulting Engineer & Architect — **OpenExchange** — Dec 2013 – Feb 2015 · **Contract**

Virtual meetings & events platform

- Architected the backend, REST APIs, and SQL Server data layer for an online meeting/calls scheduling product, and built the frontend; owned the API contracts and coordinated implementation with a distributed backend team.

Software Engineer — **IBM** — Jun 2004 – Jan 2007

Advanced Internet Technology Group — R&D team prototyping solutions with emerging technologies — Boston, MA

- Built extensively in Java on IBM's open-source Semantic Middleware Platform: implemented a Fresnel Lens renderer and a data-binding library for binding semantic data to Java SWT widgets.
- Developed the CViT native dashboard on Eclipse RCP and a workflow-management tool delivered as an Eclipse plugin; built the administration tool for the Boca Linked Data server.
- Delivered multiple prototypes demonstrating the capabilities of semantic-web technologies.

PATENTS

- Automatic creation of pre-condition queries for conflict detection in distributed processing systems
  U.S. Patent 8,364,690 · IBM
- Method and apparatus for graphically displaying compatible workflow steps
  U.S. Patent 7,519,917 · IBM
- Conflict resolution for distributed processing systems
  U.S. Patent App. 2008/0077628 · IBM

EDUCATION

M.A., Computer Science

Boston University · 2003 – 2005

B.A., Computer Science

Boston University · 1999 – 2003

LANGUAGES

- **English** — Native / Bilingual
- **Armenian** — Native / Bilingual
- **Russian** — Elementary