



# TUOMAS HATAKKA

LEAD FULL-STACK DEVELOPER · AI ENGINEER

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## PROFESSIONAL SUMMARY

*Lead full-stack developer and **AI-native engineer** with **15 years of experience** spanning front-end architecture, back-end systems, and production AI integration.*

*Currently serving as **CTO**, leading technical strategy and platform development.*

*Deep expertise in **TypeScript, React, Next.js** and **Node/Bun** runtimes, combined with hands-on LLM application engineering at the bleeding edge — **agentic workflows, Model Context Protocol (MCP) servers, retrieval-augmented generation (RAG)** pipelines, and multimodal document processing. Proven track record of **owning entire platforms end to end** — from design systems and accessible UI to database architecture, CI/CD, and cloud infrastructure.*

*Works **directly with client stakeholders** rather than behind an account manager — requirements, demos and feedback first-hand, from organisations such as the veterinary group **Evidensia** and the **Finnish National Audiovisual Institute (KAVI)**.*

## AT A GLANCE

***Stack:** React 10 yrs · TypeScript 10 yrs · Node.js 10 yrs · PostgreSQL 10 yrs · GraphQL 10 yrs · Next.js 2 yrs · LLM & agentic AI 2 yrs*

***Experience:** 15 years professional web development, since 2011*

***Work rights:** Finnish citizen (EU) — no visa or sponsorship required*

***Location:** Vantaa, Uusimaa, Finland — remote, hybrid, or on-site in Southern Finland*

***Availability:** Immediate*

***Languages:** Finnish (native) · English (fluent) · Swedish (fluent) · German (intermediate)*

## CORE SKILLS

*AI & LLM engineering:* Claude Code (plugins & skills), Gemini CLI, OpenCode, Codex, Agentic workflows, Context engineering, MCP server development (FastMCP, incl. remote), RAG pipelines (embeddings, vector search, reranking), Vector databases (Qdrant), Vercel AI SDK, LangChain / LangGraph, Prompt & eval engineering, Function / tool calling, Multimodal document extraction, SSE / NDJSON streaming, Self-hosted inference (Ollama, llama.cpp, OpenAI-compatible endpoints)

*Languages & runtimes:* TypeScript, ECMAScript, Bun, Node.js, Deno, Python, SQL, PHP, Kotlin (working knowledge), Nginx

*Front-end:* React 19, Next.js 15/16 (App Router, RSC), React Native, HTML5, CSS3 / SCSS / Less / CSS modules, Design systems & design tokens, Responsive design, UI/UX design & interface prototyping (web and mobile), Accessibility (WCAG 2.1), Three.js / WebGL, Electron

*Back-end & data:* PostgreSQL, MySQL, SQLite, MongoDB, Firebase, Supabase, GraphQL, REST APIs, Django & DRF, Express, WebSockets, Drizzle ORM, Multi-tenant architecture, Authentication & authorization (OAuth/SSO, token auth)

*Cloud & infrastructure:* Vercel, Google Cloud Platform, AWS, Azure, Cloudflare, Docker & Docker Compose, Self-managed Linux VPS administration (Hetzner), Traefik + Let's Encrypt, MinIO, GitHub Actions CI/CD, Jenkins, DNS / SSL/TLS / CDN, Stripe payments

*Tools:* zsh/bash, Git, Playwright, Jest, Jasmine, Vite, Turbopack, Webpack, ESLint (author of a published shared config)

*Practice & delivery:* Git / Git Flow, Shell scripting, DevOps principles, Atlassian (Jira, Confluence), GDPR alignment, EU AI Act alignment, Direct client stakeholder communication

## PROFESSIONAL EXPERIENCE

### CTO & PRINCIPAL ENGINEER

*GlobalLegalCheck Oy · Feb 2026 - present*

- Own the software architecture of an AI-native legal compliance verification platform end to end — system design, domain and data modelling, service boundaries and the deployment topology — alongside technical strategy and hands-on development as CTO and principal engineer.
- Built the AI contract interpreter — clause extraction, risk scoring, key-date detection and missing-clause checks — cutting manual review time by approximately 70% via a private OpenAI-compatible inference endpoint and a Qdrant embedding and reranking pipeline.
- Architected the platform on a single self-managed €10/month VPS running Docker Compose with fully automated deployment pipelines — Traefik and Let's Encrypt, PostgreSQL 16 with Drizzle, MinIO, a custom LLM backend, self-hosted Documenso e-signing and Umami analytics, and a frontend built with Next.js, TypeScript, and React Server Components — with zero AWS, GCP or Azure dependency.
- Designed a multi-tenant, organisation-scoped data model with audit logging, OAuth/SSO (Google, Microsoft Entra), SSE-streamed analysis, and custom MCP servers for deployment and CMS tooling — GDPR- and EU AI Act-aligned by keeping inference and data on EU, self-hosted infrastructure.

*Technologies:* Claude, Gemini, OpenAI, Mistral, Next.js, TypeScript, React Server Components, PostgreSQL, Drizzle, Qdrant, MinIO, Docker Compose, Traefik, Linux VPS

### FREELANCE WEB DESIGNER & DEVELOPER

*Hummingbird Design (Tmi) · Jan 2011 - present*

- Run an independent web design and development practice, continuously alongside employment — the studio behind the Hummingbird Design and MONO design systems, and the vehicle for all direct client delivery.
- Between the Easywaste engagement and GlobalLegalCheck, worked in the practice full time — building a project-partitioned RAG system and Claude Code plugin, provisioning self-hosted LLM infrastructure, and developing the design systems since carried into production work.
- Completed tens of website and web application projects end to end for clients including Suomen Talousverkko, Tuusulan seurakunta, Nurmijärven seurakunta, UP Suomi Oy, and Villa Tammikko.
- Notable early deliveries include custom course enrollment software with live enrollment and multiple social media integrations, built with PHP, WordPress, Django, jQuery, MySQL, CSS, and HTML.

*Technologies:* TypeScript, React, Next.js, CSS, Design systems, Three.js / WebGL, Electron, PHP, WordPress, Django

## FULL-STACK DEVELOPER

*Easywaste Oy & Freelancing · Feb 2024 - Sep 2025*

- Executed complete technical transformation of Easywaste's digital waste management platform over six months, starting as sole developer, migrating a legacy consultancy-maintained v1 system to a modern Next.js 14 architecture.
- Built an AI-powered invoice analysis engine from the ground up: Google Gemini API multimodal document processing, Finnish Finvoice/Peppol XML parsing, and a custom OCR pipeline for automated waste-fraction categorization with intelligent weight and amount estimation — reducing manual data entry by approximately 80%.
- Architected a 4-phase extraction pipeline covering core data extraction, dependent data handling, document hierarchy analysis, and asynchronous 14-row batch processing with NDJSON streaming for real-time progress updates, plus intelligent fallback detection driven by Finnish/English keyword mappings.
- Developed enterprise-grade business logic: automated tendering with dynamic commission calculation (up to 25% algorithmic pricing), contract lifecycle management, equipment tracking, multi-tier subscription billing (€0–€24 per location), and CSRD compliance reporting.
- Implemented the complete infrastructure stack: Next.js App Router with RSC, Supabase backend, Vercel deployment, GitHub Actions CI/CD, DNS configuration, and multi-tenant database architecture.
- Delivered multiple AI-powered freelance applications featuring streaming multimodal LLM responses, function calling, and full cloud architecture using Next.js 15, React 19, and the Anthropic and OpenAI APIs.
- Early adopter of agentic AI development tooling (Claude Code, Cline, Continue.dev, LangChain/LangGraph), significantly accelerating delivery velocity while maintaining code quality.

*Technologies:* Next.js 14/15, React 19, TypeScript, Supabase, PostgreSQL, Google Gemini API, Anthropic Claude API, OpenAI API, LangChain, Vercel, Cloudflare, Docker, GitHub Actions

## SOFTWARE CONSULTANT

*HiQ Finland · Feb 2022 - Dec 2023*

- Spearheaded front-end and back-end development on major international projects.
- Contributed development and accessibility (WCAG 2.1) fixes to the Helsinki Design System — the City of Helsinki's open-source design system, named Best Design System at Grand One 2023.
- Led front-end architecture on European-market projects serving over 100,000 users, and delivered solutions for multinational clients using React, TypeScript, GraphQL, and varied microservice backends — including Telia's microservice-based B2B webstore and HiQ's internal e-commerce platform.
- Served in a lead architecture role, guiding teams toward scalable front-end solutions and lecturing regularly in internal front-end meetings.

## FRONT-END DEVELOPER

*Nordhealth · May 2016 - Jan 2022*

- Led front-end architecture across healthcare triage products (Provet Cloud, Navisec Health, Viivi Health) for multinational clientele, reducing triage processing time by approximately 30% across five or more core medical products; every project included both front-end and back-end work.
- Owned the application architecture on Navisec Health and Viivi Health — component and state architecture, API contracts against Django REST, and the real-time layer — shaping both products from requirements through to production.
- Handled client communication first-hand — gathered requirements, demoed builds and took feedback straight from customers such as the veterinary group Evidensia and the Finnish National Audiovisual Institute (KAVI), with no account manager in between.
- Built robust web and mobile applications with React, React Native, TypeScript, GraphQL, Redux, Django & Django REST, Node.js/Express, and PostgreSQL/MySQL — including a form builder tool, real-time WebSocket chat, and a Stripe-integrated reservation system.
- Collaborated closely with cross-functional teams to ship high-quality, user-centric products on Google Cloud Platform.

## SELECTED PROJECTS

### TELIA B2B E-COMMERCE

*HiQ Finland*

- Participated in the development of a microservice-based B2B webstore.

*Technologies:* TypeScript, React, GraphQL

### HELSINKI DESIGN SYSTEM

*HiQ Finland*

- Contributed development and bug fixes to the award-winning open-source design system, ensuring WCAG 2.1 compliance.

*Technologies:* TypeScript, React, GraphQL

[hds.hel.fi](https://hds.hel.fi)

## NAVISEC HEALTH

*Nordhealth*

- Owned the application architecture — component and state design, API contracts against Django REST, and the real-time layer — and implemented notable features including a form builder tool and WebSocket chat; back-end development with Django REST, PostgreSQL, and Google Cloud Platform.

*Technologies:* React, Redux, Django REST, PostgreSQL, Google Cloud Platform

## VIIVI HEALTH

*Nordhealth*

- Owned the architecture of both the mobile and web applications for a veterinarian video reception triage service — shared domain model, API design and the booking flow — and implemented them, including a real-time reservation system with Stripe integration on Google Cloud Platform. Worked directly with the customer throughout: the adopting clinics, Evidensia among them, turning their reception workflows into product requirements.

*Technologies:* React Native, React, Express, Stripe, Google Cloud Platform

## PROVET CLOUD

*Nordhealth*

- Contributed to agile development for multinational clientele as the company's first front-end developer, implementing a form builder tool and WebSocket chat on a multi-tenant architecture. Spoke directly with the clinics running the product, including the veterinary group Evidensia, gathering requirements and demoing releases to their staff.

*Technologies:* React, Redux, Django, Django REST, PostgreSQL

## KAVI ELONET

*Finnish National Audiovisual Institute*

- Overhauled the Finnish National Audiovisual Institute's movie archive web application (elonet.fi), with a new UI and video streaming with captions. Worked directly with the customer throughout — agreed scope and interface decisions face to face with KAVI's archive staff as the institute's single point of contact.

*Technologies:* PHP, Finna

[elonet.finna.fi](http://elonet.finna.fi)

## PROJECT-PARTITIONED RAG SYSTEM & CLAUDE CODE PLUGIN

*Open source*

- Designed and built a global, project-partitioned retrieval-augmented generation system packaged as a Claude Code plugin: FastMCP server, CLI, embedding index with cross-encoder reranking, browser-based viewer, and an automated test suite. Integrated into Claude Code, Claude Desktop, and OpenCode.

*Technologies:* Python, FastMCP, Model Context Protocol, Embeddings & vector search, TypeScript

## SELF-HOSTED AUTONOMOUS AI INFRASTRUCTURE

*Personal infrastructure project*

- Provisioned and operate self-hosted LLM infrastructure on Linux VPS and ARM64 cloud instances, including remote RAG SQL endpoints and an OpenAI-compatible local LLM query API.

*Technologies:* Ollama, llama.cpp, Linux (Arch, ARM64), Node.js

## DESIGN SYSTEMS & CREATIVE FRONT-END

*Ongoing*

- Author and maintain personal design systems (Hummingbird Design, MONO) applied across web, Electron desktop, and Android (Jetpack Compose) applications — token architectures and hand-written CSS with zero utility-framework dependencies. An accessible, dependency-free date picker published on CodePen has been seen over 18,000 times and favoured 225 times. Built advanced WebGL/Three.js experiences including procedural 3D generation, vertex & fragment shaders, custom post-processing chains (depth of field, god rays, CRT), and real-time audio visualization with the Web Audio API. Publish and maintain the shared ESLint configuration @tuomashatakka/eslint-config on npm.

*Technologies:* CSS, TypeScript, Three.js / WebGL, Electron, Jetpack Compose, Web Audio API  
[codepen.io/ndne](https://codepen.io/ndne)

## EDUCATION

Bachelor of Science in Electrical and Electronics Engineering  
Aalto University · Espoo, Finland

## LANGUAGES

Finnish (native) · English (fluent) · Swedish (fluent) · German (intermediate)