

Miika Oja-Nisula

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📍 Turku, Finland



AI Engineer: LLM orchestration, prompt engineering, evals • Production healthcare AI systems • 10+ years full stack (TypeScript/Python)

Professional Experience



Mehiläinen — Nordic healthcare group, €2.1B revenue (2024)

Turku, Finland (Hybrid)

AI ENGINEER

Sep 2024 - Present

- AIMO - AI patient summary system: end-to-end architecture (patient portal ↔ AI service), BAML for type-safe prompts, multi-model fallback, two-stage verification, source citations, evals infrastructure, synthetic FHIR R4 test data. In production Dec 2025, employee pilot since Mar 2026
- Aino v2 - MDR Class IIa medical device for risk assessment: lead frontend dev, built React 19 frontend from scratch (17.4k lines strict TypeScript), custom Selenium E2E framework
- AI Gateway - multi-provider LLM orchestration platform. Contributions include chatbot prompt architecture (Jinja2), appointment tool extensions (ML-based slot prioritization), provider integration enhancements
- AI Chat Usage Analysis - multi-model ensemble classification (2.5K conversations sampled from 100K+, GPT-5/Claude/Gemini), async API pipeline with rate limiting, identified documentation gaps
- Coding Agents Workshop - designed and led hands-on AI coding agents training (Claude Code) for Mehiläinen developers
- DB Documentation Research - leading research into AI agents for automatic DB documentation (Claude Agent SDK); presented to 10 architects, secured compliance approval and research budget
- Infrastructure - monorepo (mise), trunk-based CI/CD with selective builds, Secret Manager migration (fnof), basedpyright

Python TypeScript FastAPI BAML LLM Evals React GCP Vertex AI Azure OpenAI PostgreSQL

SENIOR FULL STACK DEVELOPER

Dec 2019 - Aug 2024

- Ajanvaraus 3.0 (ajanvaraus.mehilainen.fi) - high-volume customer booking system. Key contributions include occupational health features, contract interpretation, multi-layer caching, A/B-tested search procedure optimizations, CRA→Vite migration (68% build reduction)
- Internal booking system - de facto lead dev 4 years. Key contributions include API architecture rewrite (unified Express/Socket.IO context, error handling, structured logging), real-time Socket.IO, guardian data disclosure per Finnish law
- Observability - Sentry infrastructure owner: error tracking with custom fingerprinting, request tracing, performance profiling across frontend + API
- Code Quality - ESLint rule modernization, WCAG accessibility, runtime validation (class-validator), PII protection in logs, systematic dependency updates

Node.js Express NestJS SQL Server Redis Socket.IO Redux RxJS Jest Cypress Sentry ...



Poutapilvi — Digital agency, public sector focus

Turku, Finland

FULL STACK DEVELOPER

Aug 2016 - Dec 2019

- Maisema & P4 CMS - contributed to two in-house content management systems; primary maintainer of Maisema during wind-down
- Hahtuva - extended internal project management tool with Gantt charts (basis for master's thesis)
- Integrations - CMS and third-party systems including Azure AD, WordPress plugins, Mapbox GL migration
- Customer Service - responsible customer service representative for a few months, informed Hahtuva improvements

PHP MySQL Azure WordPress Ember.js Mapbox GL ...



University of Turku - Technology Research Center (TRC)

Turku, Finland

PROJECT WORKER

May 2012 - Aug 2016

- Research Units - BID, later TRC under Brahea Center: 7 projects in small teams with significant autonomy
- App Store Crawler - data acquisition system for research (Python/Scrapy/MongoDB), co-authored scientific publication
- Multiplayer Learning Game - real-time WebSocket gameplay for education (Node.js/Socket.IO)
- Surveillance System - web interface for camera and RFID integration (C#/Node.js)
- Cloud Architecture - AWS migration design for Lounaistieto regional data service

MongoDB C# AWS Scrapy ...

Education



University of Turku

Finland

MASTER OF SCIENCE IN TECHNOLOGY (DI), SOFTWARE ENGINEERING

2009 - 2018

- Major: Software Engineering (100 ECTS, excellent)
- Minor: Game and Education Technology (21 ECTS, satisfactory)
- Thesis: Development of an internal project management tool (done at Poutapilvi)

- Major: Computer Science (70 ECTS, excellent)
- Minor: Information Theory and Algorithmic Mathematics (21 ECTS, good)

- Courses: Theory of Computation | Artificial Intelligence | Secure Programming and Testing

Skills

Languages	Finnish (Native) English (Excellent) Swedish (Basic)
Programming	TypeScript Python SQL JavaScript PHP C#
AI & LLM	Claude GPT Gemini BAML Claude Agent SDK Prompt Engineering Evals Synthetic Data
Data Science	pandas Jupyter matplotlib BigQuery PySpark Airflow
Frontend	React TypeScript MUI Redux Zustand TanStack Query Vite
Backend	FastAPI Pydantic Node.js Express NestJS Socket.IO RxJS
Databases	PostgreSQL SQL Server Redis MongoDB BigQuery
Cloud & DevOps	GCP (Cloud Run, Secret Manager, Vertex AI) Azure OpenAI Docker Kubernetes mise Git GitLab CI
Testing	Jest pytest Cypress Selenium E2E testing
Monitoring	Sentry (error tracking, tracing, profiling, LLM observability) Structured logging