Gabriel Uwaila

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Profile

Software Engineer with extensive experience in project management and software development, demonstrating a commitment to delivering high-quality solutions within deadlines. Expertise in programming languages such as Java, C# and TypeScript, complemented by proficiency in developing RESTful APIs and microservices. Adept at optimizing system performance and enhancing user experiences through innovative software solutions. Passionate about leveraging skills in full-stack development and database management to drive impactful technological advancements.

Professional Experience

Software Engineer Intern, Utonomy, Utrecht, Netherlands
March 2026 — Present

- Designed and built two production-deployed MCP (Model Context Protocol) servers for Utonomy's Solid-based data platform.
- hive-mind: remote MCP server giving AI coding agents (Cursor, Claude Code) shared architectural context of the Utonomy monorepo; built service documentation tooling, lookup and search tools, GitHub webhook-based context refresh pipeline, and bearer auth middleware; deployed on Scaleway serverless containers.
- u-mind: privacy-first personal context MCP server exposing user pod data (Solid/RDF) to AI clients via OAuth2 + PKCE; enables consent-aware read/write of personal data models (profile, shopping preferences) with automatic audit logging via idp-server's existing ACL and DataAccessLog infrastructure.
- Tech stack: TypeScript, Node.js, Fastify, MCP SDK (Streamable HTTP), Solid/RDF, Zod, pnpm/Turborepo, Docker, Scaleway, GitHub Actions CI/CD, Linear.

IT Assistant (Student) and Student Software Developer, Fujifilm Electronic Materials, Zwijndrecht, Flemish Region, Belgium
Sep 2025 — March 2026

- Built AI Shark as a POC for the Fujifilm Global AI Challenge — an internal phishing simulation and training platform targeting ~10 internal departments; used Fujifilm's internal LLM to generate personalised, department-specific phishing emails with configurable difficulty levels (including manager-impersonation with homoglyph spoofing), open/click tracking, automated training assignment, and an admin analytics dashboard; built with React, TypeScript, ASP.NET Core 10, Entity Framework Core, and SQL Server.
- Collaborate with Infrastructure Team Lead to support IT operations and administrative tasks.
- Maintain and enhance a mission-critical C# Blazor web application used by the 10 person Infrastructure Team, resolving 15+ bugs and integrating new features.
- Create automation scripts in PowerShell for upgrading Cisco network switches, reducing manual configuration time per device across 30+ switches; configure and service switches and upgrade PC hardware.
- Document IT processes and create user guides for internal staff training.
- Gain hands-on experience in software maintenance and digital infrastructure.

Software Engineer Intern, Fujifilm Electronic Materials, Zwijndrecht, Flemish Region, Belgium
Feb 2025 — Jul 2025

- Developed Asset Management System (AMS) to track 500+ IT equipment assets, streamlining resource management and eliminating manual spreadsheet tracking.
- Managed device tracking with serial numbers, logging actions like borrowing and returning.
- Integrated user account permissions for automated role handling.
- Employed .NET, Blazor Server, SQL Server, and Dapper for full-stack development.
- Gained expertise in database design, authentication, and deployment issues.

Projects

BanditGames - Full-Stack Gaming Platform

- Developed a comprehensive multiplayer gaming platform (Connect Four, Chess) featuring AI opponents, real-time lobbies, and game replays.
- Implemented a full-stack architecture using **React/TypeScript** frontend, **Spring Boot** (Hexagonal Architecture) backend, and **Keycloak** for authentication.
- Integrated an **AI Service (FastAPI/Python)** for MCTS-based opponents and a **Machine Learning API (PyTorch, MLflow, DVC)** for win probability and move prediction.
- Utilized a microservices pattern with **RabbitMQ** for event-driven communication and **PostgreSQL/MySQL** for data persistence.
- **Designed the Anti-Corruption Layer (ACL)** for external games integration, ensuring domain integrity within the Hexagonal Architecture.
- Demonstrated advanced skills in full-stack development, MLOps, containerization (Docker), and enterprise-grade security.

Asset Management System, at FujiFilm

- Built enterprise-ready Asset Management System web app with .NET 9, Blazor Server, C#, and SQL Server (Dapper ORM)
- Enabled device tracking, real-time inventory, transaction and audit logging
- Implemented user/role management with Windows Authentication and Active Directory integration
- Used modular REST API (C#/Blazor), Bootstrap 5 UI, and secure IIS deployment
- Applied full-stack development, API design, database modeling, and enterprise authentication for scalable IT asset control

Keep Dishes Going (KDG) Full Stack Project, at Karel De Grote Hogeschool

- **Backend (Spring Boot/Hexagonal Architecture):** Built a Spring Boot backend using hexagonal architecture and Domain-Driven Design, implementing menu/dish management, basket/order workflow, scheduled publishing, business hours detection, and event-driven logic. Integrated REST APIs, PostgreSQL, MapStruct, Keycloak authentication, and Stripe payments, focusing on clean domain models and efficient separation of concerns.
- **Frontend (React/TypeScript/Vite):** Developed a responsive food delivery frontend with React, TypeScript, and Vite, featuring Keycloak authentication. Implemented browsing, search/filtering, order placement, and a secure owner dashboard for restaurant management with real-time updates. Utilized Material-UI, SCSS, React Query, and Axios for UI and data handling.

Multi-Agent Personal Finance Advisor (Highest Grade in Class)

- Full-stack multi-agent AI system with 4 specialized agents (Spending Analyzer, Savings Optimizer, Investment Advisor, Goal Tracker) providing personalized financial advice through coordinated analysis and LLM-powered insights
- Backend: Python/FastAPI REST API with Pydantic v2 validation, LangChain multi-provider LLM integration (OpenAI/Ollama/Anthropic), structured logging (Structlog), and robust error handling with fallback strategies
- Frontend: React 19 + TypeScript application with Vite, React Router, CSV upload/parsing, transaction management, goal tracking, and real-time financial analysis

dashboards
• Features: Transaction categorization and anomaly detection, budget analysis (50/30/20 rule), risk-based investment portfolio allocation, goal progress tracking, and AI-generated insights from all agents
• Testing & DevOps: Unit, integration, and E2E test suite (pytest), Docker containerization, structured logging/monitoring, versioned prompt management, and code coverage reporting
• Tech Stack: Python 3.12, FastAPI, LangChain, Pydantic, React 19, TypeScript, Vite, Docker, pytest — production-ready with design patterns, type safety, and observability

Team QWERTY: Credit Card Fraud Detection System

- Developed a robust fraud detection solution using Random Forest algorithms and SMOTE sampling on Kaggle-sourced data
- Delivered the project as a FastAPI-based REST API, attaining an ROC AUC of 0.97 and an F1-score of 0.83
- Collaborated within a team of two to execute comprehensive data analysis, model engineering, and final deployment

Education

Karel de Grote-Hogeschool, Antwerp, Belgium
Applied Computer Science - BASc, June 2026

Bachelor's in Applied Computer Science with in-depth training in software development, programming, databases, IT infrastructure, and data science. Gained practical experience in machine learning, cloud technologies, and AI through project-based modules and teamwork. Developed strong skills in full-stack engineering, business collaboration, and problem-solving in real and simulated tech environments. Enhanced my professional profile with hands-on internships.

Technical Skills

Backend Development
Building RESTful and event-driven APIs with Java, Spring Boot, and .NET to power enterprise workflows and microservices.

- *Languages/Frameworks: Java, C#, Python, TypeScript, Spring Boot, .NET 9/.NET 10, ASP.NET Core, Blazor Server, FastAPI, Fastify*
- *APIs & Design: RESTful APIs, Microservices, REST API Design, Domain-Driven Design, Hexagonal Architecture, MCP (Model Context Protocol), Event-Driven Architecture*
- *Security & Payments: JWT Authentication, Keycloak OIDC, OAuth2/PKCE, Windows Authentication (AD), Stripe Payments*
- *Databases & Caching: PostgreSQL, SQL Server, MySQL, Redis*, MongoDB

Frontend Development
Creating responsive, accessible user interfaces with React, TypeScript, and modern CSS frameworks for optimal user experiences.

- *Frameworks & Libraries: React.js, TypeScript, Angular, Next.js, Blazor, Blazor Server, Vite, React Query, TanStack Query, shadcn/ui, Framer Motion*
- *Languages & Markup: HTML/CSS, JavaScript, HTML5, CSS3*
- *Styling: Bootstrap, Tailwind CSS, Material UI*

DevOps & Tools
Orchestrating cloud infrastructure, CI/CD pipelines, and containerized deployments on Scaleway, Azure, ... for scalable, reliable systems.

- *Cloud: AWS, Azure, Azure Container Apps, Azure Blob Storage, Scaleway, Vercel*
- *Version Control: Git, GitLab CI/CD, GitHub Actions*
- *Containers & Orchestration: Docker, Kubernetes*
- *Testing & Quality: Unit Testing*, Integration Testing, E2E Test, "Monkey" Test
- *Infrastructure & Processes: Infrastructure as Code, Active Directory, PowerShell, pnpm, Turborepo, Linear*

Data & Machine Learning
Processing datasets, training models, and building ML pipelines with Python, scikit-learn, and transformers for data-driven insights.

- Libraries & Frameworks: scikit-learn, PyTorch, pandas, NumPy
- MLOps & Tooling: MLflow, DVC, pytest, structured logging, SMOTE, Random Forest

AI & LLM Tooling

- Frameworks & Protocols: LangChain, MCP SDK, Anthropic API, OpenAI API, Ollama
- Patterns & Concepts: Multi-agent systems, RAG, prompt engineering, LLM integration (multi-provider), Solid/RDF linked data

Extra-Curriculuar activies

Peer Tutoring, Karel De Grote, Hogeschool, Antwerp, Belgium
Sep 2025 — Present
Peer Tutoring first year students on Programming fundamentals in java.

Live Mix Engineer, Self Employed, Belgium
Aug 2024
Self-taught Live Mix Engineer, specializing in sound mixing for various events.

Musician
2008 - Present
Self-taught Drummer, Bassist and keys player playing for various RnB and Gospel bands and artist mainly in The Netherlands.

References

Lennart De Knikker (Dev Lead) from **Utonomy.eu**

Marcel Lucas (IT Manager) from **FUJIFILM Electronic Materials**

Nick Van Beirendonck (Infra Team Lead) **from FUJIFILM Electronic Materials**

Karel De Grote College University.

Additional Information

Links: LinkedIn, Portfolio Website - gabrieluwaila.com
Languages: English, French, Dutch