

Emil Elakehal

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About Me

Languages

- English: *Native*
- Lithuanian: *Native*
- German: *Fluent; TestDAF Level 5/5 in all competencies*

Technical Skills

- Programming Languages: Golang, JavaScript / TypeScript, C++ (experienced) & Python, C# (competent)
- Core Skills: Infrastructure & DevOps, Web Crawling & Automation, Reverse Engineering & Deobfuscation, Bot Detection

Interests

- Academic: Formal Verification, Cryptography & Privacy-Enhancing Technologies, Foundations of Mathematics & Computability, Provable AI Safety
- Hobbies: Philosophy of Mathematics & AI, Basketball, Ice Hockey

Education

ETH Zürich

Bachelor of Science in Mathematics

2024 – Present

Zürich, Switzerland

Langley Grammar School

A-Levels in Mathematics, Computer Science, Physics & German

2016 – 2023

Slough, United Kingdom

- Achieved grades A* and A in A-Levels, awarded “Student of the Year”

Teaching

Prestudy Event Tutor

Mentored and led workshop for incoming BSc Mathematics students

June 2026

Zürich, Switzerland

Work Experience

agital.online

Fullstack Developer, Pedali & Blinkerbox team

2023 – 2024

Lüneburg, Germany

- Designed and deployed a distributed web crawling system to aggregate product details from retailer websites, orchestrating crawler workers with multi-node Docker Swarm on AWS and Redis-backed job queues for fault-tolerant large-scale scraping
- Built crawlers using both Playwright and raw HTTP requests, including a custom TLS client and proxy rotation system to bypass anti-bot measures
- Implemented tokenization-based filtering to remove low-value text and optimize extracted data for small LLM context windows. Used Word2Vec to semantically match vendor-specific attribute names to internal schemas
- Integrated OpenAI and Claude APIs for automated data extraction and enrichment; built and maintained the main sites and internal tools using Nuxt, NestJS, GraphQL and MongoDB

- Led complex MongoDB migrations across staging and production environments. Developed a custom product search engine on top of MongoDB Atlas Search
- Improved CI/CD pipelines on GitHub Actions, reducing Docker image build times and ensuring stable deployment across staging and production environments

CloudSolve

2020 – Present

Founder & Engineer

Side Project

CloudSolve provides software solutions for web scraping purposes.

- Deobfuscated Akamai and Cloudflare browser fingerprinting scripts using abstract syntax trees to fully reverse-engineer their bot detection logic; built an API to generate valid fingerprint data and bypass protection via raw HTTP
- Collected browser and native mobile app fingerprints at scale, building a TypeScript + MongoDB collector API, JavaScript analytics scripts for partner sites, and Android/iOS collection packages
- Built product launch monitoring crawlers delivering real-time alerts to clients the moment new items went live
- Developed a high-concurrency Amazon product data API using Golang goroutines, spreading requests across multiple API keys to circumvent rate limits

Sole AIO

2020 – 2021

Reverse Engineer

Remote

- Built high-performance shoe-botting software to purchase limited releases at speed
- Improved Bézier curve mouse-movement simulation and other behavioural mimicry techniques to evade human-interaction detection

Side Projects

MNTR (Source code available on request)

2024

- Engineered a distributed automation platform (similar to [n8n](#)) in Golang, utilizing gRPC and Protobufs for inter-container communication
- Designed an extensible architecture to rapidly integrate new service monitors and actions; reverse-engineered undocumented endpoints to bypass the rate limits and functional constraints of official APIs

Home Server

2023 – Present

- Built and maintain a secure and robust Proxmox-based home server with Docker Swarm running on Debian VMs, self-hosting CloudSolve infrastructure, my personal website + open source services for personal use
- Gained hands-on experience in computer networking, configuring my home network with a MikroTik router and incorporating Traefik as a reverse proxy
- Currently migrating to NixOS for declarative system configuration

Hobbyist Electronics

2023 – Present

- Proficient with a variety of electronic instruments, including oscilloscopes and function generators, with hands-on experience in soldering, PCB assembly, and circuit troubleshooting
- Created prototype and wrote firmware in C for BLDC motor controller
- Working on a split keyboard input module for the Framework 16 laptop, including PCB design in KiCad and programmatic CAD modelling using build123d (registered project in ETHZ's Student Project House)