Matěj Volf

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Education

BSc. Charles University, Faculty of Mathematics and Physics   Oct 2022 – June 2025
Computer Science with Specialisation in Systems Programming

- **Practical coursework**: Operating Systems, Compilers, Functional Programming, High-Performance and Parallel Software, Advanced C++, Rust
- Strong foundation in algorithms and data structures, computer architecture, discrete mathematics, probability theory, linear algebra and others
- **Thesis**: **Rust for HelenOS**. Defended in June 2025 with grade Excellent. See the *Projects* section for more details.

Work Experience

Apify ⬈, Web Automation Developer / Node.js Engineer *(part-time)*   Prague, Czechia
June 2022 – June 2025

- Developed **end-to-end solutions for customers' scraping and web automation projects.** Optimized a large dataset processing pipeline by introducing Redis caching.
- Contributed to Apify's **open-source projects**, notably the Crawlee web scraping library. Optimized Docker images for better build cache utilisation and smaller size.
- Pioneered **integration with modern developer tooling**, connected Apify's custom CI with GitHub PR reviews and commit status checks.

Projects

Rust for HelenOS

- Complete development of a set of Rust compilation targets for the HelenOS operating system: configured the Rust compiler to correctly link ELF for HelenOS, implemented the Rust standard library abstractions for HelenOS thread and filesystem APIs, ported a GUI library runtime
- Resolved complex issues with HelenOS libc and dynamic linker/loader
- Key result: GUI & CLI applications written in Rust can be easily run on HelenOS
- Project poster & more details at mvolfik.github.io/projects/helenos-rust ⬈

Roborally

- High school graduation project. Browser-based remake of the famous board game.
- Developed a full-stack application using JavaScript and Rust, gained experience with real-time communication using WebSockets.
- GitHub repository: github.com/mvolfik/roborally ⬈

Server Administration

- Deployment of custom software and web applications onto a private server, as well as administration of open-source services including PostgreSQL, Grafana monitoring suite, and an e-mail server.
- Hands-on experience with containerisation technologies, Docker compose, and other tools used in this space.

Volunteering Experience

Protab ⬈ **programming summer camp**, Lecturer and Organizer   Mar 2023 – present

- Gave lectures and practicals for high school students about programming, algorithms, hardware principles, networking and other computer science topics.
- Prepared an 'Escape room' adventure with the use of microcontrollers and interactive software minigames.

Skills

High level of proficiency with all the technologies listed below. Minor experience with many other technologies, ability to quickly adapt and learn new tools, especially if they are similar to those already known.

Programming languages: Rust, JavaScript, TypeScript, Python, C, C++

Databases: SQL (PostgreSQL, SQLite, MySQL), Redis, MongoDB

Others: Git, Docker, Linux, Grafana, Web Technologies (React, Svelte, Solid.js, Node.js, WebSockets, WebAssembly)

Security: Winner of Czech Cybersecurity Competition 2025 ⬈, knowledgeable in cryptography, web security and other topics.