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Mazunki Hoksaas

Systems Programmer and Kernel Developer

Summary

Software developer with an interest in system's architecture, embedded software, compilers, linguistics, and philosophy.

I'm drawn to the world of free and open source software. I care about making things more accessible, open, and ensuring compliance to standards and ethics.

Work Experience

2022–2026 **Teacher**, *Learnist*, Remote
- Taught programming fundamentals to children and adolescents across a range of ages and levels
- Collaborated on shared curriculum and course planning spanning multiple levels and age groups
- Independently ran and oriented different student groups
- Delivered tailored private lessons, adapting to both neurotypical students and students with focus or reading-comprehension difficulties

2025 **External Examiner**, *University of Oslo*
Wrote scripts to automatically test all exam submissions for IN2140, an introductory course on operating systems and networking, in coordination with the course administrators

2014–2022 **Maintenance and Mariner**, *Marine Service A/S*, Oslo
Worked on maintenance of boats, ferries, and cargo ships

2016–2022 **Ferry Sailor**, *Oslo-Fergene AS*, Oslo
Assisted the captain and passengers aboard a local ferry

Education

2024–present **MSc Programming and Systems Architecture**, *University of Oslo*
- I am working on efficient, performant and safe memory management within the context of IncludeOS, a minimal unikernel for microservices and cloud usage.
- This includes interaction with VirtIO, QEMU and low-level hardware interactions.
- My work on this also makes use of flakes for reproducible builds.
- Besides my thesis, I have taken several courses in networking and fundamentals of programming languages and compilers.
- Optimized a YUV video codec (codec63) in C/C++ using CUDA, SIMD, and PCIe data transfer for heterogeneous multi-core architectures

Grad. 2025 **BA Philosophy**, *University of Oslo*
- Focusing on both theoretical and applied ethics
- With a minor in Linguistics

Grad. 2023 **BSc Informatics: Robotics and Intelligent Systems**, *University of Oslo*

2018–2019 **Applied Data Science**, *Noroff Education*

Projects

Custom System Services — I build and maintain up my own set of system services using the s6-rc and execline system. This allows me to have a better control, customizability and understanding of the systems I use on a daily basis

IncludeOS — Working on memory management for IncludeOS, a minimal unikernel for microservices and cloud usage, interfacing with VirtIO and QEMU at a low level. Part of my ongoing MSc thesis.

Operating System — As part of an assignment for a course on kernel building, we built a simple operating system. Throughout the course, we build different pieces over one semester.
- Setting up a bootloader on MBR-BIOS/legacy system on the IA-32 architecture (x86).
- Implement threading scheduling support, using non-preemptive and preemptive approaches
- Supporting virtual memory by using external storage for swapping out pages
- Added a basic file system to the OS similar to FAT

Open Source Contributions — 147 pull/merge requests and commits across 63 projects (80+ merged), including Vim, tmux, Gentoo, IncludeOS, Waybar, wofi, and WirePlumber. Partially complete list: mazunki.tech/contributions

TJ Bot, Home assistant — A project done for the first year of Studio at Noroff University & College by four students, using different APIs together to create a home device / bot. Built from scratch, incorporating various technologies such as Text to Speech, Speech to Text, visualisation, network communication, beyond others; and enhancing all this with a focus on security and privacy aspects

Technical skills

Languages — English (C2), Spanish (C2), Norwegian (C2) and Catalan (C1)

Programming Languages — C++ (43 merged/open PRs, incl. IncludeOS, Waybar, KeePassXC), C (17 PRs, incl. tmux, wofi, sway), Python (27 PRs), and POSIX shell scripting (19 PRs, incl. Gentoo). Also comfortable with Haskell, Java, and Zig

Development Tools — I pedantically use Git for version control; Vim for editing; tmux, kitty and Sway for multiplexing; Nix for reproducible builds and environments; and SSH for jumping between different systems

Systems and Platforms — Experienced with virtualization using QEMU, and proficient in managing Linux-based systems, particularly with non-traditional init systems like s6 instead of systemd. Familiar with the Wayland display protocol, especially wlroots. I self-host my own infrastructure, including nginx and TLS certificate management

Volunteering

2019-2020 — **Language Tutor**, *Norsk Start*, Oslo
I helped foreigners improve their language skills in Norwegian and in English, in order to have a better chance at their goals

2017–present — **Technical support**
I often help newbies and more experienced people on forums and IRC-like chats track down problems with their systems, mostly Linux-related

2022–present — **Package Maintainer**
I've been maintaining several packages on Gentoo for a while. This requires working with different build systems, requirements, and expectations

Certifications

2018 — **Crowd- and Crisis Management**, *Redningsselskapet*, Oslo

2018 — **Reduced Safety Coruse for seafarers**, *Redningsselskapet*, Oslo

2018 — **Boat Driver License**, *Sjøfartsdirektoratet*