Getz Mikalsen

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Education

Lunds Tekniska Högskola (LTH) – Lund, Sweden **Graduated 2025**

Master of Science in Embedded Electronics Engineering

Work Experience

Master Thesis – Western Digital Corporation – Copenhagen, Denmark **January 2025 – June 2025**

- Designed and Implemented an ECC controller for FTJ memristors.

Teaching Assistant – LTH – Lund, Sweden **September 2024 – December 2024**

- EITF35 Introduction to Structured VLSI Design.

Google Summer of Code – FreeBSD – Remote **May 2024 – September 2024**

- Ported x86 SIMD algorithms (<=SSE4.2) to Aarch64 (NEON) for FreeBSD libc and extended existing unit tests.
- Presented work at EuroBSDCon 2024 in Dublin, Ireland

Self-employed & Consultant – Stockholm, Sweden **September 2017 – August 2020**

- I specialized in reverse engineering of vintage analog synthesizers, designing custom PCBs with modern components, and reconstructed the physical units and tested them to specification.

Projects

Head of Systems - Datorföreningen vid LU & LTH

Managing a diverse range of computer systems, including legacy machines (VAX, Sun, Silicon Graphics) and modern servers running FreeBSD, NixOS, Debian, and OpenBSD.

- Conducted internal training for members on subjects relevant to the daily operation and on competence in addition to opportunities available within LU/LTH's courses.

IEEE AP-S Student Design Contest 2023: Reconfigurable Intelligent Surfaces **Matlab/FEKO**

Proposed and implemented a design for a RIS as an educational tool that allows for the manipulation of 5G signals.

- Implemented a tool for simulating variable load on the CPW to display the normalized radiation pattern of the RIS.

Experimental ferroelectric memristorbased in-memory computing platform for energy-efficient 6G **SystemVerilog**

Built a cutting-edge in-memory computing platform on ZYNQ FPGA, unlocking efficient matrix multiplications using memristor arrays for next-gen 6G tech.

- Directed project architecture and implementation, guiding the analog team through integration as digital team lead.

FOSS contributor – FreeBSD, GerdaOS **C/assembly**

Work on Zynq ultrascale+ support, bsd licensed diff3, SSE2/NEON/SVE string functions, cpu scheduling for FreeBSD. Maintained GerdaOS (open-source fork of KaiOS) support for JioPhone 1, a feature phone in India.

Lab Assistant - ElektroTekniska Föreningen vid LTH

Developed and delivered instructional materials to support hands-on learning in electrical engineering concepts, fostering a collaborative and engaging environment for student members.

- Worked on personal projects using esp32, stm32 and analog filter design.

Knowledge/Skills

- ASIC/FPGA RTL design, simulation, and verification in SystemVerilog using Xilinx, Questa, Cadence, and FOSS tools
- Microcontroller programming, interfacing, and usage of peripherals including interrupts, timers, and ADC/DAC
- Knowledge of communication protocols including AMBA family (AHB/APB/AXI), SPI/UART/I2C and USB
- Programming in C, C++, Rust, Zig, Go, SystemVerilog and scripting in bash, Python, Perl, Nix and Tcl
- Ghidra, IDA Pro, OllyDbg, gdb, coreboot, Yocto, U-boot, KiCad, Altium Designer, Emacs