

# Omar Hmdea

Embedded Software Engineer

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Embedded Software Engineer with 2+ years of hands-on experience across bare-metal firmware on ARM Cortex-M, system-level software on embedded Linux, and Linux test infrastructure. Strong in C/C++ and Python, with hardware-level debugging skills (logic analyzer, oscilloscope, gdb, perf) and a track record of measurable reliability gains in production systems. B.Sc. Software Engineering, Cum Laude.

## WORK EXPERIENCE

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**Software Engineer — Siraj Technologies** Oct 2024 – Present

*Engineering placements delivering embedded and systems software for Qualcomm, Netafim, and Weka*

**Qualcomm — On-device security agent, embedded Linux on ARM SoC**

- Designed and implemented a watchdog / process-supervisor mechanism in C/C++ that auto-recovers failed processes of the security agent, improving uptime and reliability.
- Owned the runtime configuration manager end-to-end: live (no-restart) config updates, validation, persistence, and safe defaults for runtime settings and security policies.
- Built and maintained system-level software on embedded Linux; performed root-cause debugging and performance optimization with gdb and perf.

**Netafim — Bare-metal firmware, EFR32ZG23 (ARM Cortex-M33)**

- Developed a bare-metal optical-to-RF radio bridge in C, implementing PHY framing and a custom link protocol.
- Raised link reliability from 80.6% to 99.8%** by implementing DMA-driven bitstream capture for CPU-free, timing-critical data transfer.
- Programmed MCU peripherals directly through memory-mapped registers and Silicon Labs EMLIB/HAL: GPIO, UART, TIMER, CMU (clocks), NVIC (interrupts), DMA, and the radio subsystem.
- Debugged signal-timing and protocol issues at the hardware level with a logic analyzer and oscilloscope.

**Weka — Linux test infrastructure for a high-performance storage product**

- Built a Linux-based automated test infrastructure in Python (Pytest) validating the product across AWS, OCI, VMware, and on-prem environments.
- Ran OS certification across Linux distributions and kernel versions, diagnosing and resolving OS-level compatibility issues.

**Software Engineer Intern — Google, GCP Filestore** 2022 – 2023

- Implemented dependency injection for scalable features in a fully managed cloud file system; designed scale and data-integrity tests for cloud backups, improving test automation and efficiency.

## SKILLS

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**Embedded:** C/C++, ARM Cortex-M, bare-metal firmware, EFR32 / Silicon Labs EMLIB, GPIO, UART, SPI, I2C, DMA, timers, interrupts (NVIC), clock management, memory-mapped I/O, embedded Linux

**Debug & Tools:** Logic analyzer, oscilloscope, gdb, perf, ftrace, Linux, Git, Bash, Jira

**Testing & Infra:** Python, Pytest, Kubernetes, AWS, OCI, GCP, Grafana, Packer

**Also:** Java, Node.js, TypeScript, Angular, SQL, MongoDB; AI-assisted development (Cursor, Claude Code, GitHub Copilot)

## EDUCATION

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**B.Sc. in Software Engineering, Cum Laude (GPA 90) — Shamoon College of Engineering (SCE), Be'er Sheva** 2018 – 2022

**Full Stack Development Course — Elevation, Tel Aviv** 2022

## PROJECTS

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- NLP Offensive Language Detection** — published research (AI & ML). Python, ML, NLP.
- ThinkUp** — multi-tenant education management platform with role-based access and an AI chatbot agent (OpenAI API). Angular, Node.js, Firebase.

## VOLUNTEERING & LANGUAGES

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Mentor — Siraj NGO (2018 – present) | Coordinator — Tel Sheva Elite Educational Center (2019 – present)

Arabic — native | Hebrew — fluent | English — advanced