TAHA **ED-DAFILI**

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Experience

Linux Kernel Mentee (LFX) — Remote
The Linux Foundation — 03/2026 – Present

- Develop and submit C patches for the IIO subsystem, successfully merging fixes for the ADXL345 driver into the mainline tree.
- Iterate on patches for the AD5504 driver under active review, responding directly to maintainer feedback on the kernel mailing lists.
- Selected from 600 applicants for the Spring 2026 Linux Kernel Mentorship, contributing to real-world driver development in the IIO subsystem.

Mentor – IoT & Electronics — Marrakesh-Safi
Youth Tech Challenge Africa (YTCA) @ UM6P — 02/2025 – 07/2025

- Guided 32 students across 3 teams through a 6-month hardware prototyping program from initial concept to a final hackathon presentation.
- Taught hands-on workshops covering electronics fundamentals, sensor integration, and practical embedded system design.
- Facilitated cross-cultural problem-solving among participants from Morocco and Cameroon to ensure teams delivered functional prototypes.

C Developer Intern — Nouaceur
M2M Group — 07/2024 – 01/2025

- Diagnosed load timeouts in an 8-thread C authorization server that limited concurrent request handling to ~2–3 simultaneous transactions.
- Replaced a bottlenecking global lock with per-thread SQL database connections and finer-grained synchronization primitives.
- Increased stable concurrent request handling to 20+ requests, eliminating client timeouts and restoring parallel processing.

System & Embedded Projects

The 3020 Project — Multi-Node Embedded System — *Founder & Maintainer (C / OpenWrt / PlatformIO)*

- Built a multi-node embedded system using a TL-MR3020 router to coordinate multiple external hardware modules.
- Reduced the OpenWrt OS image to fit within a 4MB flash constraint and developed a C userspace interface for device interaction.
- Designed and implemented lightweight communication protocols over TCP and UART to enable real-time hardware control.

B-Gyro — Kernel From Scratch (x86) — *Group of two (C / x86 Assembly)*

- Developed a Multiboot-compliant 32-bit x86 operating system kernel from scratch using C and assembly language.
- Implemented core system software including interrupt handling (GDT/IDT), hardware drivers (PIT, RTC), and PCI device enumeration.
- Built a VGA text interface and an interactive shell, utilizing QEMU to debug and test system stability during development.

Leadership & Community

Technical Lead — Ben Guerir
Architecture Technology Club (Archi&Tech) @ UM6P — 02/2025 – Present

- Organized the LDC Competition, designing hands-on hardware challenges for 48 participants across multiple national campuses.
- Led technical workshops teaching architecture students how to integrate electronics, robotics, and IoT into their physical models.
- Mentored multidisciplinary student teams, providing technical guidance from prototype conception to final hardware implementation.

Vice President — Ben Guerir
Leet Makers Club @ 1337 — 08/2025 – Present

- Delivered an 8-session technical workshop series on embedded Linux and microcontrollers for new club members.
- Managed the club's robotics initiatives, setting up hardware training environments and organizing practical hacking sessions.
- Presented a custom hardware hacking project as a featured speaker at the NullHat Morocco 2025 cybersecurity event.

Education

1337 – UM6P (42 Network) — Ben Guerir, Morocco
Digital Technologies Architect — 2021 – Present
Focus: Systems & Kernel Development

Technical Skills

Languages: C, C++, x86 Assembly, Python, Bash
Embedded: OpenWrt, ESP32, Arduino, PlatformIO
Hardware: Circuit Analysis, Sensors
Systems: Linux Kernel, Driver Development, Cross-Compilation
Protocols: TCP/IP, UART, I2C, SPI
Tools: Git, Make, GDB, QEMU, Docker