Ahmed Mohammed Khaer Alzoubi

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Summary

Computer Engineering graduate (Ajman University, 2026) focused on embedded systems. I design PCBs in KiCad, write C/C++ firmware for ESP32 and STM32 microcontrollers, and build the tools that read the data back. I work from datasheets and check each design decision against them.

Skills

Microcontrollers: ESP32, ESP32-C3, ESP32-C6, STM32, PIC, Arduino
Programming: C, C++, 8086 Assembly, Arduino framework
Interfaces and protocols: UART, SPI, I2C, I2S, PWM, BLE, Wi-Fi (TCP/UDP), MQTT, LoRa (SX1278, Heltec LoRa 32), 433 MHz FSK (HC-12)
Hardware design: KiCad (schematic, layout, DRC, Gerbers for JLCPCB), FreeCAD enclosures, Proteus, Multisim
Digital design: VHDL, FPGA (Xilinx ISE)
Tools: MATLAB, Arduino IDE, RoboDK, Git, GitHub, Linux, Overleaf (LaTeX), Obsidian, Claude Code

Experience

Embedded Systems Intern Jan 2026 – May 2026
SpacePoint *UAE*
Work is covered by a non-disclosure agreement and is described in general terms.

- Designed the schematic of a CubeSat communication board in KiCad: STM32 microcontroller, 433 MHz LoRa radio with an RF front end, power and temperature monitoring, USB-C, and a PC/104 stack connector.
- Wrote ESP32 command-and-data-handling firmware with telemetry over serial and Wi-Fi, and redundant uplink/downlink paths over a 433 MHz HC-12 radio and MQTT.
- Added firmware handling of ground-station motor commands (speed, direction, duration) for attitude-control testing.
- Built a two-node LoRa telemetry link on Heltec LoRa 32 boards: one node reads sensors over UART and transmits, the other decodes packets and forwards them to an MQTT broker.
- Built an ESP32-CAM payload that captures and sends images on command over MQTT, and a web ground-station dashboard for live IMU, GPS and system-health telemetry.

Computer Engineering Club Leader Sep 2024 – May 2025
Ajman University *Ajman, UAE*

- Ran Arduino and embedded-systems workshops and organised an Arduino Design Project Competition.

Projects

Digital Business Card (Seelie Card) github.com/AhmedMKAlzoubi/Digital-B-Card
KiCad, ESP32-C3, e-paper, NFC, Li-Po power, FreeCAD

- Designed a 2-layer 100 x 60 mm board: ESP32-C3-MINI-1, 2.66-inch SSD1680 e-paper, NT3H2111 NFC tag with a custom PCB antenna (about 1.9 uH, tuned with a C0G capacitor), Li-Po charging, LDO regulator and MAX17048 fuel gauge.
- Traced every part choice and configuration pin to its datasheet, cleared DRC, and produced the Gerber set for JLCPCB.
- Modelled three 3D-printed enclosures (card, desk stand, badge) in FreeCAD.

Smart Helmet HUD (Graduation Project) github.com/AhmedMKAlzoubi/Graduation-Project-Public
ESP32, BLE, transparent OLED, React + Capacitor, Google Maps API, C++

- Built a prototype that shows turn-by-turn directions on a transparent OLED in the visor; an ESP32 receives route steps over BLE from a companion phone app and draws the direction cues in real time.

Desk Companion github.com/AhmedMKAlzoubi/Desk-Companion
ESP32-C6, OLED, Wi-Fi, Google Calendar API, C++

- Animated OLED character that reacts to the time of day, live weather and upcoming Google Calendar events, plus a Wi-Fi synced clock.

Temperature-Controlled Fan and FPGA Digital Lock github.com/AhmedMKAlzoubi/MY-PROJECTS
PIC, LM35, PWM, LCD; VHDL, Xilinx ISE

- PIC-based fan whose PWM speed follows the measured temperature, with an LCD readout.
- Password lock written as a VHDL finite state machine, simulated and synthesised in Xilinx ISE and tested on an FPGA.

Education

Bachelor of Science in Computer Engineering Sep 2021 – May 2026
Ajman University *Ajman, UAE*

Certifications

Design of Digital Circuits with VHDL – L&T EduTech (Dec 2024) | Fundamentals of Digital Design for VLSI – L&T EduTech (Feb 2025) | Fundamentals of TinyML – Harvard (edX) | AI Infrastructure and Operations – NVIDIA

Additional Information

UAE residence and work visa | Qatar residency permit | UAE driving licence | Degree attested in the UAE, Qatar and Syria
Languages: Arabic (native), English (fluent)
Activities: Robotics and IT Sustainability Hackathon, ADIPEC 2024 (Abu Dhabi)