Moutaz Mohammad

Embedded engineer building intelligent systems

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ABOUT

I studied communications and electronics engineering and moved into the world of in-vehicle networks: CAN, CAN FD and the controllers and drivers underneath them. Since 2022 I test, debug and bring up these networks at a specialised test house in Germany. In my own time I built a small self-hosted infrastructure on a Raspberry Pi: zero-trust access, encrypted 3-2-1 backups with restore tests, monitoring, and LLM-powered automation that files my paperwork and diagnoses outages on its own. That is where I am heading: AI engineering, with the discipline of embedded work behind it. Measured, secure, and built to keep running.

EXPERIENCE

Test Engineer - C&S group GmbH 2022 - today

Wolfenbüttel, Germany. Test house and consultancy for automotive in-vehicle networks (ISO/IEC 17025 accredited lab).

- CAN / CAN FD conformance testing of the data link layer (ISO 16845-1).
- Bring-up, debugging and fixing of CAN / CAN FD controller drivers on automotive microcontrollers: RX/TX paths, mailbox handling and race conditions, bus-off handling, FD bit timing, transmitter delay compensation, clock configuration.
- Python tooling that automates test-result analysis and reporting.

SELECTED PROJECTS

Moutaz Home Live in my home

A self-hosted homelab on a Raspberry Pi 5 that runs, backs up and watches itself.

Paperless AI Live in my home

German paperwork filed by an LLM: title, sender, type, amount, deadline, and a short summary in Arabic.

Self-diagnosing server Live in my home

When a service goes down, the server collects evidence, an LLM diagnoses it, and I get one message with the cause and the fix.

Home RAG · Master's thesis In progress

Ask questions in Arabic about German documents and get answers with sources, measured, not guessed.

CAN tools Live in the browser

A CAN FD bit-timing calculator that runs entirely in the browser. A frame decoder comes next.

EDUCATION

M.Sc. Web Technologies - Syrian Virtual University (online) expected Jul/Aug 2027

Thesis: RAG-based document Q&A, cross-lingual (Arabic/German), hybrid retrieval and evaluation.

B.Sc. Communications & Electronics Engineering - Yarmouk Private University, Syria 2014 – 2019

SKILLS

Embedded & automotive networks: CAN / CAN FD, LIN, Automotive Ethernet (basics), ISO 16845-1 conformance, Controller drivers on MCUs, Bit timing & TDC, Oscilloscope / bus analysis

Python & tooling: Python, Test automation, Log & result analysis, Report generation, CLI tools

Linux, Docker & security: Debian / Raspberry Pi OS, Docker Compose, systemd, Zero Trust (Cloudflare Access, Tailscale), Backups & restore tests (restic), Monitoring & alerting

AI / LLM integration: LLM APIs with structured output, RAG (hybrid retrieval), Evaluation (Recall@k, faithfulness), Prompt-injection-aware design, Cost guards

Web: HTML / CSS / JavaScript, Static sites (Astro), i18n & RTL, Accessibility

LANGUAGES

Arabic: native | German: B2 | English: C1

CERTIFICATIONS

IBM AI Engineering Professional Certificate (Coursera) (in progress)
Google Cloud Professional Machine Learning Engineer (next goal)