

MOHAMMAD KHALIFE

SOFTWARE DEVELOPER | FULL-STACK | C++ / IOT

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PROFESSIONAL SUMMARY

Software developer with a Master's degree in Internet of Things and experience in full-stack development, mobile applications, IoT systems, automation, and applied AI. Research background includes designing and implementing distributed algorithms in C++ at FEMTO-ST and co-authoring an IEEE publication on fine-tuning large language models.

TECHNICAL SKILLS

Programming Languages: C++, Python, TypeScript, JavaScript, PHP, Dart, SQL

Web & Backend Development: React, Next.js, Node.js, Express, Laravel, Livewire, Redux Toolkit, Prisma, REST APIs

Databases & Tools: PostgreSQL, MySQL, SQLite, Git, Docker, Linux, Vitest

Mobile & IoT: Flutter, Android, Modbus RTU, SolarmanV5

AI & Data: PyTorch, TensorFlow/Keras, Hugging Face, spaCy, XGBoost, LightGBM, Pandas

PROFESSIONAL EXPERIENCE

Freelance Software Developer | H3M Softwares (Independent Team) | Aug 2026 - Present

- Worked with a four-developer team to deliver Ali's Store, an English-Arabic e-commerce and retail management platform for a clothing retailer.
- Co-developed storefront and administration workflows for catalog, variants, inventory, orders, promotions, returns and loyalty using Next.js, TypeScript, Express, Prisma and PostgreSQL.
- Currently co-developing a separate point-of-sale (POS) product with the team (in development).

Research Intern | FEMTO-ST Institute | Montbéliard, France | Mar 2026 - Aug 2026

- Designed and implemented decentralized C++ algorithms for self-reconfigurable 3D catom robots in VisibleSim using neighbor-to-neighbor message passing.
- Built obstacle-aware exploration, branching and plant-inspired coiling behaviors; evaluated coordination and growth strategies through simulation.

Automation & ERP Developer (Freelance) | Zaza Woods | Remote, Germany | Aug 2024 - Jun 2025

- Developed custom Odoo modules and scripts to synchronize inventory and operational data with Shopify; automated reporting and data processing using Python and Excel VBA.

Accountant | Khalife for Building Materials | Lebanon | 2019 - 2024

- Maintained financial records, inventory, payroll and reporting for daily operations.

SELECTED PROJECTS

Lawen Wasel - Student Ride Sharing | Laravel, PHP, Livewire, Sanctum, REST APIs | [GitHub](#)

- Developed 30+ API endpoints for driver and passenger workflows, with booking, recurring trips, administration and route ordering through OpenRouteService.

Solar Inverter Monitor | Flutter, Dart, SQLite, Riverpod, Android | [GitHub](#)

- Built a local-network solar/battery/grid monitoring app with multi-logger profiles, background outage/restoration alerts and persistent event history.

deye_solarman | Dart, TCP/UDP, Modbus RTU, SolarmanV5 | [GitHub](#)

- Adapted a reusable, asynchronous Dart library for Solarman logger discovery and direct read-only Deye inverter register access without cloud services.

Distributed Leader Election & Shape Recognition | C++, VisibleSim

- Implemented distributed leader election across 14,764 simulated modules and relative-coordinate propagation for shape matching.

EDUCATION

Master 2, Internet of Things | Université Marie et Louis Pasteur, France | 2025 - 2026

Master 1, Computer Science | Lebanese University, Lebanon | 2024 - 2025

Bachelor of Science, Computer Science | Lebanese University, Lebanon | 2021 - 2024

PUBLICATION & CERTIFICATIONS

Co-author, "Fine-Tuning and Agentic Workflows for Lebanese Arabizi Understanding and Generation," IEEE MENACOMM 2026.

AWS Certified Cloud Practitioner (2024) | CS50 Python (Harvard) | IELTS 6.5 (2025)