El Sayed Hesham Mowafi

Computer Engineering Student | Full-Stack and Embedded Software

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SUMMARY

Fourth-year Computer Engineering student at Abu Dhabi University (CGPA 3.929/4.0, graduating May 2027) with industrial internship experience at TAQA Distribution and client software running in production. I build systems end to end, from embedded devices and computer vision to secured Node.js APIs, web dashboards and mobile apps. Seeking software or computer engineering internships and graduate roles from mid-2027.

EDUCATION

B.Sc. Computer Engineering Abu Dhabi University, Abu Dhabi — Sep 2023 – May 2027 (expected)
CGPA 3.929 / 4.0 · Relevant coursework: Self-Driving Cars, Internet of Things I and II, Cross-Platform Mobile App Development

EXPERIENCE

Software Engineering Intern TAQA Distribution Company, Water Control Centre, Al Ain — Jun 2026 – Aug 2026
React Native (Expo), TypeScript, Node.js, Express, Prisma, MongoDB, Socket.IO, Next.js, Leaflet, AWS S3, Jest

- Designed and built a field operations reporting platform that replaced verbal and paper reporting with GPS-tagged, photo-backed reports: a cross-platform mobile app for field crews, a versioned REST API, and a Next.js supervisor dashboard with a live Socket.IO map and a dispatch flow for site checks.
- Secured the backend with JWT token-version revocation, private S3 storage behind short-lived presigned URLs, content-based upload validation, Zod payload validation and layered rate limiting.
- Wrote 196 automated tests (Jest, React Testing Library, Supertest) across the backend, mobile app and dashboard, focused on security-critical and role-dependent paths.
- Trained in the control room on 4–20 mA instrumentation, RTU/PLC hardware and IEC 62443 SCADA architecture with OT/IT segregation.

Freelance Full-Stack Developer Remote — 2023 – Present
React, TypeScript, Node.js, MongoDB, Prisma, Redis, Flutter, Firebase, AWS S3

- Delivered an insurance quote management platform for a UAE agency, now in production: React web portal, Node.js backend and Flutter mobile app covering medical, motor and non-motor insurance.
- Built role-based workflows for customers, typing centres, agents, brokers and admins, with automated agent assignment, Firebase push notifications, S3 document storage and Redis caching.
- Also built Discord bots and automation tools for small businesses and online communities.

SELECTED PROJECTS

Metermap iOS app, published on the App Store — React Native, Expo, Firebase, Proj4

- Route planner for utility meter readers: imports Excel exports, converts UTM coordinates to GPS, orders stops with clustering and nearest-neighbour routing, and tracks progress on a satellite map. Taken through App Store review to release.

Excel to Invoice Web app, invoice.sayedmowafi.dev — React, TypeScript, Node.js, Puppeteer, Socket.IO

- Generates branded PDF invoices in bulk from accounting exports (QuickBooks, Xero, Zoho), with fuzzy column detection, validation reports and real-time progress over WebSockets.

Autonomous Lane-Keeping Vehicle Team of three — Python, OpenCV, YOLOv11n, Raspberry Pi 5

- Runs lane tracking (bird's-eye-view transform, polynomial fitting, Kalman filtering) in parallel with NCNN-quantised YOLOv11n obstacle detection, feeding dual PID control at 15+ FPS on a Raspberry Pi 5; stops within ±2 cm of obstacles.

IoT Waste Sorting System Team of two — PyTorch, Raspberry Pi 5, Arduino, Flask-SocketIO

- MobileNetV2 classifier (98% accuracy) on a Raspberry Pi gateway drives an Arduino servo over UART to sort items in under 2 seconds, with ultrasonic bin-level sensing, a live web dashboard and Telegram alerts.

SKILLS

Languages	TypeScript, JavaScript, Python, C++, Java, Dart, MATLAB
Web and mobile	React, Next.js, React Native (Expo), Angular, Flutter, Tailwind CSS
Backend and data	Node.js, Express, Flask, Prisma, MongoDB, Redis, Firebase, SQLite, Socket.IO, BullMQ
Testing and ops	Jest, React Testing Library, Supertest, Zod, Git, AWS S3, Cloudflare, Nginx, PM2
Embedded and vision	Raspberry Pi, Arduino, ESP32, OpenCV, PyTorch, YOLO, PID control, Kalman filtering
Industrial systems	SCADA, RTU/PLC, 4–20 mA instrumentation, IEC 62443
Spoken languages	Arabic (native), English (fluent)