Ahmad Nayfeh

Electrical Design Engineer | AI Automation

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Electrical design engineer in medium-voltage switchgear who builds AI-assisted tools that remove repetitive engineering work. Also ships complete software products end to end (backend, web, Android). M.Sc. candidate in Electrical Engineering (AI focus) at KFUPM.

EXPERIENCE

Electrical Design Engineer, Alfanar (Secondary Switchgear Factory) **Jan 2026 – Present**

MV secondary switchgear: RMU, metered RMU, load-break switches, autoreclosers *Riyadh, KSA*

- **End-to-end design ownership:** take customer orders from electrical schematics through customer approval to a complete production release (drawings, wiring and ferrule lists, labels, SAP BOMs), then act as the design point of contact for QC, testing, and production until delivery.
- **AI automation:** introduced AI-assisted tools that automate routine design checks and documentation for the team, catching errors before they reach production.

Teaching Assistant, Fundamentals of Electric Circuits, KFUPM **Aug 2024 – May 2025**

- Designed teaching materials and led weekly problem-solving sessions for 50+ students.

AI Research Intern, SDAIA–KFUPM Joint Research Center **Jun 2023 – Aug 2023**

- Built a two-stage YOLOv8 + classifier pipeline for waste detection, improving F1 by 2% over baseline on a 10,000+ image dataset.

PROJECTS

Shadhra: Arabic-first reading companion · FastAPI, PostgreSQL, Redis, React, Expo, OCR, LLMs **2026**

- Live web and Android app (shadhra.app, Google Play) that captures quotes from printed books by photo, with search, daily resurfacing, and chat over the user's own library.
- OCR pipeline guarded by a CI accuracy gate (character error rate ≤ 5% on an Arabic test set); multi-provider LLM router with cost tracking and spending limits; ~300 automated test files.

Khatwa: walking app with a game layer · Kotlin, Jetpack Compose, Firebase **2026**

- Native Android app: step tracking, optional phone lock until a step goal is met, quests, ranks and streaks, and walk suggestions timed around weather and prayer times; CI with emulator tests and signed releases.

MRI brain tumor segmentation · PyTorch, U-Net **2025**

- ResNet-UNet reaching 0.963 Dice on BraTS-Africa 2D slices; compared three architectures and deployed a Streamlit app.

EDUCATION

M.Sc. Electrical Engineering (AI focus), KFUPM **2024 – Present**

Thesis: synthesizing fluorescein angiography from color fundus photographs (image-to-image translation)

B.Sc. Electrical Engineering (Second Honor), KFUPM **2018 – 2024**

SKILLS

Engineering: MV secondary switchgear (RMU, MRMU, LBS, autorecloser), IEC 62271, utility specifications, SEE Electrical, SAP (BOM, product master data)

Software: Python, FastAPI, PostgreSQL, React / TypeScript, Kotlin / Jetpack Compose, GitHub Actions CI/CD

AI: LLM tooling and agents, OCR and document processing, PyTorch, computer vision

Languages: Arabic (native), English (professional)

AWARDS

Top 3 team, ACT28 AI for Climate Action Hackathon (Samsung & UNDP), 100+ participants, Jun 2024