Mojtaba Almadan

Computer Engineer | IoT, Embedded Systems & AI Integration | Python Backend
Eastern Province, Saudi Arabia | +966 54 333 1575 | mojtaba.almadan@gmail.com | Saudi National
linkedin.com/in/mojtaba-almadan | github.com/mjs19999 | mjs19999.github.io/portfolio

SUMMARY

Computer engineer with 3+ years in Python backend development and a co-op in AI integration, now pursuing an MSc in Internet of Things at KFUPM. Builds both ends of a system: ESP32 and FreeRTOS firmware that reads real-time vehicle sensor data, and Django REST APIs on PostgreSQL.

TECHNICAL SKILLS

Programming: C, C++, Python, SQL, Java, Verilog, Assembly
Embedded & IoT: ESP32, FreeRTOS, PlatformIO, OBD-II, ELM327, UART, Wi-Fi, HTTP/REST, real-time systems
Backend: Django, Django REST Framework, REST APIs, PostgreSQL, database design, RBAC, backup and recovery
Machine Learning: PyTorch, TensorFlow, scikit-learn, pandas, time-series forecasting, data analytics
Computer Vision: OpenCV, YOLO, object detection
Systems & Tools: Git, GitHub, Logisim, endpoint provisioning, OS imaging, network troubleshooting
Soft Skills: problem-solving, technical communication, cross-functional collaboration
Languages: Arabic (native), English (professional working proficiency)

PROFESSIONAL EXPERIENCE

Computer Engineer, Systems & Internal Tools **Jul 2023 - Present**
Khonaini International Company Ltd., Jubail, Saudi Arabia

- Designed, built and deployed a Python, Django and PostgreSQL asset management system that replaced legacy software and spreadsheets and is in daily use, tracking 684 assets, 933 employee records and 1,423 custody assignments.
- Modeled equipment custody as an append-only, auditable ledger with role-based access control (RBAC) for four user groups and two on-screen signatures on every transfer.
- Wrote backup and restore commands covering the database, signature images and source code; diagnosed and fixed a failed restore caused by content-type and permission conflicts.
- Provisioned and configured endpoints (OS images, software, drivers), troubleshot network and server connectivity, and wrote user documentation and training materials.

AI Integration Engineer (Co-op) **Jun 2021 - Jan 2023**
UAS2030, Dhahran, Saudi Arabia | Python, PyTorch, OpenCV, YOLO

- Collaborated with computer vision and ML specialists on a YOLO-based AI system for object identification, recognition and tracking on an unmanned aircraft system (UAS).
- Integrated the AI components into the UAS mission pipeline and tested them across environments and scenarios to find where detection degraded.

PROJECTS

Smart OBD-II: IoT Telematics Device | C++, ESP32, FreeRTOS | github.com/mjs19999/SmartOBDII-Final

- Built an ESP32 connected vehicle device that reads live engine telemetry (coolant temperature, RPM, speed, throttle) over OBD-II via an ELM327 adapter and raises real-time safety alerts on dangerous combinations.
- Split the firmware into three prioritized FreeRTOS tasks: 100 ms acquisition, 200 ms fault detection, and the web dashboard at the lowest priority, so it never preempts sampling or alerts.

Menu Brain: Demand Forecasting | Python, scikit-learn, Django | github.com/mjs19999/smart_menu_brain

- Engineered 30+ features from point-of-sale history (cyclical time encoding, 7/14/30-day moving averages, lag features) and selected among gradient boosting, random forest and linear regression models with 5-fold cross-validation.
- Served per-branch forecasts through a Django REST Framework API on PostgreSQL, with Arabic and English interfaces.

32-bit RISC Processor | Logisim, Assembly | github.com/mjs19999/32-bit-cpu-in-logisim

- Designed single-cycle and pipelined versions and validated the design with a selection sort written in assembly.

AES Encryption Core in Verilog | Verilog | github.com/mjs19999/AES_in_verilog

- Co-developed AES encryption and decryption hardware as a hand-written algorithmic state machine; 6 stars, 4 forks.

EDUCATION

Master of Science in Internet of Things **Expected May 2027**
King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia | GPA: 3.83/4.0
Coursework: IoT platforms, LPWAN, MQTT, LoRaWAN, Zigbee, edge computing, telematics, industrial IoT

Bachelor of Science in Computer Engineering **2017 - 2023**
King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia
Coursework: computer architecture, digital design, microprocessors, operating systems, computer networks, signal processing
Activities: designed the team's machine learning model for the AUVSI SUAS student drone competition