Hussein Ertimi

Electrical & Electronic Engineering
Tripoli, Libya | +218 92 942 8586 | husseinertimi@outlook.com | linkedin.com/in/hussein-ertimi | github.com/has2809

Final-year Electrical & Electronic Engineering student graduating in Nov 2025 with **Highest Honors (GPA 92%)**. Hands-on work across **ML (PyTorch)**, **digital logic/FPGA (Verilog)**, and **data tooling (SQL, Python)**; 2+ years in IT operations. **IEEE Student Branch Chair**. Focused on **ML systems & AI–hardware co-design**, with interest in **mechanistic interpretability and & robust ML models**.

Education

University of Tripoli Nov 2021 – Nov 2025 (Expected)
B.Sc. Electrical & Electronic Engineering (Specialized in Computer & Control) *Tripoli, Libya*

- **GPA 92%**, graduating **early** with **Highest Honors**.
- Relevant Coursework: Control Systems, Digital Systems, Deep Learning, Computer Architecture, Data Structures, Microcontrollers, Microprocessors, Numerical Methods.

Talaee Al-Taqadum High School Sep 2017 – Dec 2020
High School Diploma *Tripoli, Libya*

- GPA: **99.77%**; Ranked **4th nationwide**.

Work Experience

Municipality of Tripoli Center Aug 2023 – Present
Technical Supervisor (IT Specialist) *Tripoli, Libya*

- Provide IT support for **1,000+** staff; endpoint provisioning, incident response, asset & account management.
- Network maintenance & diagnostics (switching, Wi-Fi, cabling); documented standard procedures for recurring issues.

Research & Projects

Logic-guided Segmentation (Capstone) —*Research Reproduction & Extension* University of Tripoli | Oct 2025

- Rebuilt from scratch a differentiable-logic CNN codebase and reproduced the published results.
- Extended to a **logic-guided encoder–decoder (U-Net-style)** for semantic segmentation; validated on MNIST & CamVid-road (e.g., IoU **0.956** / **0.8135**).

Discretized DLGN Prototype on FPGA — *Mini Project, Hardware Prototyping*University of Tripoli | July 2025

- Converted a trained differentiable-logic classification model on MONK dataset to synthesizable Verilog and deployed on Terasic DE0 (Cyclone-III).
- Achieved **2.38 M samples/s**, **∼420 ns latency**, **∼155 mW**.

IjtihadAI — Arabic Chatbot — *Open-Source Arabic NLP Toolkit* GitHub | Feb 2025

- Built a **retrieval-augmented Q&A pipeline**: scraped & cleaned domain sources, built embeddings + vector DB, implemented retrieval + generation with prompt templating, and shipped a lightweight Web UI with a simple evaluator.
- Provided full scripts for **data scraping**, **vector-DB creation**, evaluation, with a detailed README.

EE434: Computer Architecture Online Course — *Volunteer Instructor*University of Tripoli | Oct 2024 – Jan 2025

- Designed and delivered a full EE434 online course (recorded lectures, solved problem sets) on a Telegram channel accessible to **300+** peers.

EE432: University Management System — *Course Project (Data Structures)* University of Tripoli | Sep 2024

- Developed a Python CLI University Management System with modular architecture, **SQLite backend**, role-based access, **CRUD** for users/subjects/grades/enrollments with prerequisite checks, and user documentation.

Leadership & Community Service

IEEE Student Branch, University of Tripoli Jan 2025 – Present
Chair *Tripoli, Libya*

- Led a 13-member executive committee across four standing committees & four technical chapters.
- Grew membership from ~50 to **150+**; organized **8** major events in 2025 and **10+** technical workshops.
- Launched weekly competitive-programming & Python groups (15+ participants each); delivered CCNA & Linux admin courses.
- Secured ~**50,000 LYD** in sponsorships from local tech/finance firms.

Public Scout and Girl Guide Movement 2021 – Present
Assistant Leader *Tripoli, Libya*

- Lead a troop of 30 youth in leadership and community service training.

Honors & Awards

- **Highest Honors**, University of Tripoli (Nov 2025)
- **Second Place**, **LCPC**: Libyan Collegiate Programming Contest (2024)
- **First Place (Rank 1)**, General First-Year Engineering Students, University of Tripoli (2022)
- **Fourth Highest Score**, National High-School Final Exams (2020)

Skills

- **Programming:** Python, C/C++
- **Machine Learning:** PyTorch, scikit-learn
- **Data:** SQL, pandas, NumPy
- **Modeling** & **Simulation:** MATLAB, Simulink
- **Hardware & FPGA:** Verilog, Digital Logic Design, Quartus Prime, ModelSim/Questa
- **Software & Tools:** Git, VS Code, Jupyter, PyCharm

Certifications

- IELTS Academic — 7.5 Overall
- Coursera — Deep Learning Specialization
- Coursera — Natural Language Processing Specialization

Languages

- Arabic — Native
- English — Advanced (C1) — IELTS 7.5