Ahmed Elmasri

Masters in Intelligent Systems — Edge AI & Natural Language Processing Research
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Professional Summary

Masters in Intelligent Systems with experience in AI model optimization, Edge AI deployment, and NLP. High Academic Achievements (2nd/50 MSc, 1st/59 BSc) and strong applied research background through international work at LS2N (France). Worked on TensorFlow Lite quantization, Model conversion between libraries, and embedded deployment optimization for STM32 and Edge TPU hardware.

Education

Master of Science in Intelligent Systems, Univ. of Adrar, Algeria, 2025 — Rank: 2/50
Thesis: *Use of Mixture of Experts (MoE) for Skin Cancer Detection*
Focus: Deep Learning, Computer Vision, AI Optimization

Bachelor of Science in Information Systems, Univ. of Adrar, 2023 — Rank: 1/59
Thesis: *QR Code Real-Time Attendance System*
Distinction: Top graduate for software engineering and applied AI.

Research Experience

Research Intern — LS2N Laboratory, Nantes, France (2025)

- studied BC-ResNet architecture for Edge TPU compatibility and TensorFlow Lite Conv2D v5/v6 mismatches.
- Identified quantization–rescaling relationships affecting per-channel accuracy.
- Diagnosed a severe accuracy drop (from 96% to 55%) during PyTorch-to-ONNX conversion, tracing the root cause to conflicts between the model's dynamic temporal pooling layers and the static nature of the ONNX format.
- Deployed BCResNet using STM32 AI Cube X toolkit, optimizing quantization and embedded inference speed.

Master's Research Project — Univ. of Adrar (2024–25)

- Designed Mixture of Experts (MoE) architectures for skin cancer classification with TensorFlow & PyTorch.
- Enhanced large-network efficiency and scalability through expert routing and equity penalty.

Professional Experience

Freelance Web & Mobile Developer (2021–Present)

- Developed full-stack web and mobile apps using React, Next.js, TypeScript, and React Native.
- Built "Savr" browser extension for real-time price comparison using web scraping & NLP.

Coding Instructor — National Youth Program, Algeria (2025)

- Selected for a Ministry-recognized program to train youth in technology and coding.
- Delivered hands-on training in Python, web development, and algorithmic problem-solving to 30+ students.

Technical Skills

Languages: Python, R, C/C++, JavaScript, TypeScript, MATLAB
Frameworks: TensorFlow, PyTorch, Scikit-learn, TensorFlow Lite, ONNX
Edge AI & Embedded: STM32, ESP32, Google Edge TPU, TinyML, Quantization, Model Export
Tools: Docker, Git, Linux, VS Code, Web & Mobile Development

Research Focus

Model Optimization • Edge AI Deployment • Quantization • Model Conversion • Embedded Inference • NLP Systems • Deep learning

Languages

Arabic (Native) • English (Fluent) • French (Intermediate B1/B2)

Selected Projects & Writings

- *"Why BC-ResNet Requires Conv2D v6 in TensorFlow Lite"* – Analysis of quantization operator compatibility.
- *"Dynamic Temporal Pooling and ONNX Export Incompatibility"* – Research on model graph limitations.
- **Savr Extension:** Real-time price comparison via NLP & web scraping.
- **Edge AI Benchmarking Suite:** STM32 & TPU performance evaluation toolkit.

Awards & Recognition

1st/59 (BSc) • 2nd/50 (MSc) • LS2N Research Internship (France,Nantes) • Code Instructor (2025)