## Elmasri Ahmed

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Portfolio: elmasri.pages.dev

Location: Adrar, Algeria / Nantes, France (internship)

### Research Interests

- Artificial Intelligence, Machine Learning, and Deep Learning
- Mixture of Experts architectures and optimization of large-scale models
- Computer Vision for medical applications (skin cancer detection, healthcare AI)
- Natural Language Processing (transformers, embeddings, positional encoding)
- Edge AI: TinyML, ML/DP on the Edge, efficient deployment on accelerators (TPUs, ESP32, Coral)
- Applied Data Science and Probabilistic/statistical Methods

### Education

MSc in Intelligent Systems – University of Adrar, Algeria Focus: Artificial Intelligence, Machine Learning, Optimization

Thesis: "Application of Mixture of Experts (MOE) for Skin Cancer Detection"

Expected completion: 2025

BSc in information systems – University of Adrar, Algeria

Focus: Algorithms, Software Development, Applied AI

Graduated: 2023

# Research Experience

Intern – LS2N Laboratory, Nantes, France (2025)

Explored Tensor Processing Units (TPUs) for AI workloads: computational performance, control flow, and power consumption using Coral development boards and TensorFlow.

#### Master's Research Project (2024–2025)

Developed Mixture of Experts models for skin cancer detection. Investigated optimization and efficiency of large neural networks using TensorFlow and PyTorch.

#### Independent Research (2023–2024)

Studied Natural Language Processing concepts: transformers, embeddings, positional encoding. Prepared educational presentations on LLMs and transformer models.

### **Professional Experience**

#### Web & Mobile Developer (Freelance) (2021–Present)

Built and deployed responsive e-commerce platforms. Developed a mobile app connecting users with local services using geolocation. Stack: React, Next.js, React Native, Tailwind CSS.

Created Savr, a browser extension to scrape e-commerce sites and compare product prices in real time. Implemented web scraping, NLP-based analysis, and injected UI systems.

## Teaching / Administrative Experience

#### Ministry-Approved Coding Instructor (2025)

Selected by Algerian ministry to provide programming and IT training to youth. Designed and delivered beginner-friendly coding sessions in Python and HTML with interactive projects.

#### Awards and Grants

- Internship approval at LS2N Laboratory, Nantes, France with stipend (600€/month).
- Selected by Algerian ministry for a national program teaching youth coding (2025).

### Conferences and Presentations

- "Introduction to Transformers and Large Language Models" Multi-Agent Systems course, University of Adrar (2024).
- Master's research presentation on Mixture of Experts for Skin Cancer Detection, University of Adrar (2025).

## Languages and Skills

Languages: Arabic (native), English (fluent), French (intermediate)

Programming: R,Python, C/C++, JavaScript, TypeScript, MATLAB

Frameworks: TensorFlow, PyTorch, Scikit-learn, React, Next.js, React Native

Edge/AI Tools: Coral EdgeTPU, TinyML, ML/DP on the Edge,LangChain,Ollama Data Science: Machine Learning, Deep Learning, NLP, Computer Vision, Probabilistic Meth-

ods

Other: Git, Docker, Linux