

# **ABDELAZIM LOKMA**

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<https://abdelazimlokma.github.io>

## **EDUCATION**

### **Boston University**

Boston, MA

#### **Masters, Artificial Intelligence - Final GPA : 3.8 / 4.0**

Sep 2023 - Dec 2024

Relevant Coursework: Graduate Object Oriented Programming & Design Principles, Machine Learning, Computer Vision, Natural Language Processing, Graduate Databases.

### **Boston University**

Boston, MA

#### **Bachelor of Arts and Sciences, Major in Computer Science**

May 2023

Minor in Business Administration

## **PROJECTS**

### **FairCase A.I - Machine Learning Project (Python, ChromaDB, LangChain)**

Dec 2024

- Designed FairCase, an AI-powered tool for the National Lawyers Guild Massachusetts Chapter, automating the analysis of civilian complaints against Boston Police Department officers.
- Implemented a custom LangChain multi-query retriever that dynamically generates RAG queries for each allegation-description pair by extracting contextually relevant segments of complaint descriptions.
- Utilized R.A.G, ChromaDB and advanced prompt engineering to retrieve B.P.D policies, analyze misconduct, and provide explainable, actionable reprimand recommendations for B.P.D officers.

### **Weather Prediction Model - Machine Learning Project (Python)**

May 2024

- Developed RNN & Ridge Regression based models using historical weather data to predict future temperatures across multiple cities.
- Achieved a mean absolute error of 2 degrees Fahrenheit from ground truth results.

### **Sign Language Identification Program - Computer Vision Project (Python, OpenCV)**

Mar 2024

- Spearheaded design and implementation of an algorithm to recognize American Sign Language (ASL) gestures using template matching and circularity measurement techniques.
- Achieved a greater than 90% classification accuracy in ASL gesture recognition.

### **Fully Convolutional Network for Semantic Segmentation - Computer Vision Project**

Feb 2024

- Implemented and trained a Fully Convolutional Network (FCN-8s) with a VGG-16 backbone for semantic segmentation, optimizing key components like the forward pass, loss function.
- Achieved a performance of mIoU > 27% on a custom dataset by fine-tuning the model's hyper-parameters, exceeding the baseline requirements.

## **EXPERIENCE**

### **Teaching Assistant - CS 611 Graduate O.O.P & Software Design in Java**

Sep 2024 - Dec 2024

Boston University

Boston, MA

- Taught and mentored over 50 graduate students in lab sessions, providing guidance on Object-Oriented Programming concepts in Java.
- Collaborated with the course instructor to influence course design, helping to shape lab exercises and assignments to better align with learning objectives.

### **Summer Intern**

Jul 2021 - Aug 2021

Dell

Cairo, Egypt

- Acquired comprehensive training in AI, 5G, and DevOps, expanding knowledge and proficiency.
- Led the mock project "E7keeli" to provide online therapy access for middle to lower working class Egyptians, presenting it to DELL Egypt executives.

## **SKILLS**

- Java, Python (Pandas, PyTorch, HuggingFace, NumPy), LangChain, ChromaDB, C++, SQL, Git.
- Multilingual: Arabic (Native), English (Fluent), French (Conversational).