

# Tony Boutros

Junior Developer

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## EDUCATION

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American University of Culture and Education

2022 - 2025

BSc in Computer Science | GPA: 3.75

### Certificates:

- Natural Language Processing (NLP) in Python – Udemy (2025)  
*Includes: Natural Language Processing in Python, Modern NLP in Python, and NLP with Python*

## SKILLS

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**Languages:** Java, Python, JavaScript, MySQL

**AI/ML:** PyTorch, Hugging Face Transformers, spaCy, PEFT, LLMs

**Frameworks/Tools:** Spring Boot, Hibernate, FastAPI, Flask, React, Git, REST APIs, LangChain

## PROJECTS

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### AI Chatbot Backend

- Built complete backend system for AI chatbot with user authentication and persistent conversation storage
- Integrated Hugging Face text generation model via FastAPI microservice to generate AI-powered responses
- Implemented secure authentication with JWT tokens, password reset functionality, and user session management
- Designed relational database schema using Spring Data JPA for users, conversations, messages, and security tokens
- Technologies: Spring Boot, PostgreSQL, FastAPI, Hugging Face, Hibernate

### NLLB Transformer Pipeline for Translation

- Developed end-to-end machine translation pipeline using NLLB model with LoRA optimization
- Implemented spaCy-based text preprocessing and built modular architecture for data preprocessing, training, and inference
- Technologies: PyTorch, Transformers, PEFT, spaCy, WandB

### AI-Powered Image Classification System

- Built full-stack web application with React frontend and Flask backend using CNN+FPN architecture
- Achieved 95% classification accuracy across 13 categories
- Integrated batch processing, real-time image manipulation, and REST APIs

## LANGUAGES

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**Arabic:** Native

**English:** Fluent

**French:** Basic