

Majd Ayash

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Profile

Engineering student focused on machine learning, NLP, and computer vision, with hands-on experience building AI-driven software systems and practical data applications.

Education

American University of Beirut (AUB)

Bachelor of Engineering, Computer and Communications Engineering
Minor in Applied Mathematics

Beirut, Lebanon

Expected May 2027

Relevant Coursework: Data Structures and Algorithms, Advanced Algorithms, Machine Learning, Deep Learning, Software Engineering, Probability and Statistics, Linear Algebra, Signals and Systems

Projects & Extracurricular

ClassCast — Multimodal Lecture-to-Podcast System

Python, FastAPI, Docker, OCR, ASR, OpenAI APIs

- Built an end-to-end system that converts lecture videos into a searchable transcript with synchronized board/slide OCR and podcast-style audio outputs.
- Implemented frame sampling and SSIM deduplication, reducing OCR cost by over 70% while maintaining accuracy.
- Integrated AssemblyAI ASR with OpenAI Vision in a hybrid pipeline for robust OCR extraction.
- Developed a modular FastAPI backend and containerized all components using Docker for reproducibility and easy deployment.
- Created a TTS generation module producing chaptered “podcast” summaries using OpenAI TTS with local fallback engines.

Customer Churn Prediction

Python, Scikit-learn, Random Forest, Pandas, NumPy

- Developed an end-to-end machine learning pipeline for customer churn prediction using a structured dataset.
- Built preprocessing workflows (scaling, one-hot encoding), trained a RandomForest classifier, and evaluated performance using accuracy, classification metrics, and a confusion matrix.
- Implemented a lightweight command-line interface that allows real-time churn predictions for new customer profiles.

Skills

Programming: Python, C++, R, SQL, HTML, CSS, JavaScript, Assembly, Verilog, Matlab

ML Frameworks: Scikit-learn, TensorFlow, PyTorch

Developer Tools: Docker, GitHub

Software: Microsoft Word, Excel, PowerPoint

Languages: Arabic (Native), English (Professional)

Certifications: Machine Learning Specialization (Coursera) — Introductory, Intermediate, Advanced