

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) Beirut, Lebanon
Bachelor of Engineering, Computer and Communications Engineering *Expected May 2027*
Minor in Applied Mathematics

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