

# Rayan Al Abdallah

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## PROFESSIONAL SUMMARY

Innovative AI/ML Engineer specializing in Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), and Natural Language Processing (NLP). Proven experience in building end-to-end AI pipelines, managing vector databases, and developing applied AI solutions for education, healthcare, and wearables

## TECHNICAL SKILLS

- AI/ML & NLP: RAG Systems, LLM Orchestration (LangChain), Embeddings, BERT, Sentiment Analysis, TF-IDF
- Frameworks & Libraries: PyTorch, TensorFlow, scikit-learn, Hugging Face, OpenAI API
- Data Engineering: Pandas, NumPy, Feature Engineering, ChromaDB, FAISS, SQL
- Programming: Python, JavaScript, Java, SQL, PHP, Dart
- Tools: Git, GitHub, Jupyter, Google Colab, Flask, Matplotlib

## PROFESSIONAL EXPERIENCE

**Auvia Group | Data Science Intern | Oct 2025 – Dec 2025**

- **Proactive LLM System:** Developed an autonomous RAG-based agent using LangChain and vector databases to enable proactive information retrieval and contextual reasoning
- **Smartwatch for Students:** Contributed to machine learning models for student activity monitoring and designed dashboard visualizations for data-driven insights
- **Neuroscience (EEG/BCI):** Conducted signal preprocessing and baseline modeling for cognitive pattern recognition using EEG data
- **Tech Stack:** Python, LangChain, OpenAI API, Chroma/FAISS, scikit-learn, TensorFlow

## KEY PROJECTS

**BookBuddy – AI Document Assistant | 2025**

- Architected a full RAG-powered conversational system from scratch for multi-document Q&A and automatic summarization
- Built a custom ingestion pipeline for PDF, TXT, and DOCX files with intelligent chunking and semantic search via ChromaDB.
- Implemented real-time streaming responses and persistent chat history using Flask and Ollama (Llama 3.1:8b).

**Auto-Advising System (Senior Project) | Feb 2025 – May 2025**

- Developed a web-based platform integrating OpenAI's GPT API to suggest university courses based on academic prerequisites and progress.
- Reduced manual review time by creating role-based dashboards and automated real-time advising logic.

**AI & ML in Cancer Imaging | Nov 2024 – Feb 2025**

- Engineered a diagnostic model for early breast cancer detection using the Breast Cancer Wisconsin dataset.
- Compared performance metrics (accuracy, precision, recall) across Logistic Regression, Random Forest, and Neural Networks.

**Sentiment Analysis for User Reviews | Feb 2025 – May 2025**

- Classified Trustpilot reviews using a comparative pipeline of VADER (lexicon-based), fine-tuned BERT, and GPT-based assessments
- Applied advanced text preprocessing (tokenization, lemmatization, POS tagging) using NLTK and spaCy

## CERTIFICATION

- AI & LLM Engineering Mastery — Udemy (2025)
- AI & Digital Marketing Scholarship Program (2025)
- Data Analysis — Simplilearn
- Cisco: ITN + SRWE
- LinkedIn: Leading a Team Through Change

## EDUCATION

- Lebanese International University (LIU) — Bachelor in Computer Science (2021–2025)
- Amir Shakib Arsalan High School — Lebanese Baccalaureate in Life Science (2020)