

# Ahmad Sharara

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## PROFESSIONAL SUMMARY

AI/ML-focused Software Engineer with hands-on experience in Natural Language Processing, sentiment analysis, fraud detection, and speech recognition/synthesis systems. Skilled in Python, TensorFlow, Hugging Face, and traditional/ensemble ML techniques. Strong foundation in software engineering and back-end development with a passion for building intelligent, real-world AI applications.

## SKILLS

- Technical Skills
  - a) Programming & Scripting: Python (Automation, scikit-learn, TensorFlow, PyTorch, Hugging Face)
  - b) Machine Learning: Logistic Regression, SVM, Random Forest, Ensemble Learning, MLP, XGBoost
  - c) NLP & Speech Technologies: FinBERT, NLTK, Gensim, spaCy, SpeechRecognition, gTTS, Tacotron
  - d) Data Handling & Visualization: Pandas, NumPy, Matplotlib, Seaborn, GridSearchCV, SMOTE, PCA
  - e) Web Development: HTML5, CSS3, JavaScript, Tailwind, Bootstrap, jQuery, AJAX
  - f) Backend & API: Laravel, .NET, ASP.NET MVC, Swagger, Stripe API, REST APIs
  - g) Databases: MySQL, PostgreSQL
  - h) Tools: Git, Visual Studio, AWS S3
- Soft Skills
  - a) Problem Solving and Critical Thinking
  - b) Time Management
  - c) Communication Skills
  - d) Creativity
  - e) Leadership and Teamwork
  - f) Work Ethic
  - g) Networking
  - h) Enthusiasm
  - i) Professionalism

## EDUCATION

**Rafik Hariri University (RHU)** | Beirut, Lebanon

Aug 2021, May 2025

- Bachelor of Engineering, Computer & Communications Engineering
- Relevant Coursework: Machine Learning, Natural Language Processing, Artificial Intelligence, Software Engineering, Database Systems, Embedded Systems, Computer Networks.

## PROJECTS

### Sentiment Analysis of Arabic Tweets using MARBERTv2

May 2025 – Present

- Developed a deep learning pipeline to classify Arabic tweets into positive, negative, or neutral sentiments using MARBERT and MARBERTv2 transformer models.
- Preprocessed raw Arabic text with Farasa (tokenization, stemming) and normalized emojis and orthographic features using pyarabic.
- Trained the model on the ASAD dataset (~100k tweets), handling class imbalance using weighted loss and stratified sampling.
- Achieved 89% accuracy and Macro F1-score of 0.87, with F1-scores of 0.92 (neutral), 0.80 (positive), and 0.89 (negative).
- Enhanced training with early stopping, optimized learning rate (5e-6), and tokenizer synchronization to ensure stable deployment.
- Built a prediction pipeline with readable labels, original tweets, and CSV export for application integration.

### Aspect-Based Sentiment Analysis in Financial News

Feb 2025 - March 2025

- Performed aspect-based sentiment classification using SVM, Naïve Bayes, and FinBERT on financial news datasets.
- Integrated fake news detection with a 98.6% accuracy ensemble (Logistic Regression, Naïve Bayes, Random Forest).
- Used TF-IDF vectorization, entity sentiment mapping, and visualizations including word clouds and ROC curves.

### Credit Card Fraud Detection Using Ensemble Methods

Feb 2025 - March 2025

- Applied SMOTE to balance an imbalanced Kaggle dataset of 280K+ transactions.
- Trained and evaluated Logistic Regression, Random Forest, Naïve Bayes, and MLP models.
- Developed a stacking ensemble model that achieved 0.9855 precision and high F1 score.

### Solar PV Power Prediction with Weather Data

Feb 2025 – Mar 2025

- Predicted solar power output using XGBoost and Random Forest regressors.
- Performed feature selection using PCA and Chi-Square.
- Tuned hyperparameters with GridSearchCV and achieved high R<sup>2</sup> score with seasonal accuracy analysis.

- Developed a **full-stack secure e-commerce platform** for clothing sales, with **user-friendly browsing using Tailwind CSS, checkout, and admin management**.
- Improved **checkout efficiency by 50%** through integration of **Stripe API payment gateway** and an optimized shopping cart system.
- Implemented role-based access control for admins and users, ensuring secure and efficient management of orders and inventory.
- Designed and deployed a scalable backend using **Laravel (PHP)** and **PostgreSQL**, achieving 99.8% uptime on **Heroku cloud hosting and AWS S3**.
- Optimized database queries and improved page load time by 35% using **Laravel Eloquent ORM and indexed queries**.
- Integrated analytics dashboards, enabling admins to track orders, revenue, and customer behavior through **interactive charts and CSV exports**.
- Implemented **AJAX-based search and filtering**, reducing product search time by 60%.

### Speech-to-Text & Text-to-Speech System

March 2024 – Apr 2024

- Built a real-time Python system using TensorFlow and Tacotron for STT and TTS conversion.
- Achieved <10% Word Error Rate and MOS ≥ 4.0 for synthesized voice.
- Integrated gTTS and SpeechRecognition with GUI-based interface using Tkinter.

### Fitness Energy

Feb 2024 – Apr 2024

- Designed and developed a **responsive fitness website** offering pricing plans, trainer information, online product sales, and interactive customer engagement tools using **HTML5, CSS3, JavaScript, jQuery and JSON**.
- Improvement in website load speed by 50% through optimized JavaScript and CSS.
- Increased user interaction by 60% with hover effects and dynamic page elements.
- Enhanced user accessibility across multiple devices with fully responsive design.
- User authentication, interactive trainer profiles and product purchasing features.

## PROFESSIONAL EXPERIENCE

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### Integrated Digital Systems (IDS), .NET Full Stack Developer Intern | Beirut, Lebanon

Jul 2024 – Sept 2024

- Developed robust back-end solutions using **C#, ASP.NET, and ASP.NET MVC**, improving system efficiency by 25%.
- Collaborated with front-end teams to design responsive and interactive user interfaces using **HTML5, CSS3, JavaScript, and jQuery**, enhancing user engagement by 30%.
- Championed the integration of **Swagger APIs**, leading to a unified data management system that streamlined operations; the initiative is currently adopted by 10+ development teams, enhancing project deliverability timelines.
- Conducted performance optimizations, reducing page load times by 20% across the platform.
- Ensured cross-browser compatibility and mobile responsiveness, contributing to a 15% increase in website traffic.

### Rafik Hariri University, Lab and Teaching Assistant | Damour, Lebanon

Jan 2023 – Dec 2023

- Provided hands-on support to over 50 students in Introduction to Engineering and Logic Design Lab courses, facilitating smoother lab sessions and experiment execution.
- Assisted in the setup, troubleshooting, and preparation of lab experiments, ensuring a 100% operational rate for lab equipment.
- Maintained well-organized, safe lab environments, improving lab efficiency by 15%.
- Analyzed common errors in student submissions, identifying key misconceptions; implemented a structured feedback system resulting in an average increase of two letter grades for participants across the semester.

## EXTRA-CURRICULAR ACTIVITIES

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### Chairperson of IEEE, Rafik Hariri University | Damour, Lebanon

Oct 2021 – Oct 2024

- Led the planning and execution of high-impact tech events, workshops, and seminars, catering to a diverse audience of different majors and achieving 15% in event attendance during my tenure.
- Drove community engagement and outreach initiatives, resulting in a significant growth 85% in IEEE membership during my term as a chairperson.
- Effectively managed and delegated responsibilities to team members, ensuring the successful execution of several events.

### Ambassador of Rafik Hariri University, IEEE

- Ambassador of Semicolon Academy
- Ambassador of IEEEExtreme 18.0
- Ambassador of IEEEExtreme 17.0
- Ambassador of AI Olympiad in Jordan

Aug 2024 – Oct 2024

May 2024 – Oct 2024

Jun 2023 – Nov 2023

Feb 2023 – Jul 2023

## REFERENCES

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Upon Request