Zahraa Lakkis | Data Scientist

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CORE COMPETENCIES

Arabic and English	**Data Engineering**	**Data Preprocessing**
C++ / MATLAB / R	**Analytical Skills**	**Communication Skills**
Python / YOLOv8 / U-Net / Torch	**Artificial Intelligence**	**Machine Learning**
Rasterio / GeoPandas / QGIS / Shapely	**API Integration**	**Statistical Analysis**
PyProj / NumPy / Pandas / Power BI	**Data Cleaning**	**Data Visualization**

WORK EXPERIENCE

AI Data Engineering Internship, National Center for Remote Sensing**,** Lebanon   **Aug 2025 – Nov 2025**

- Detected greenhouse areas in Lebanon using satellite imagery and calculated their total surface area.
- Built an end-to-end workflow pipeline and integrated the trained system into the existing model.
- Focused on computer vision and AI-based image detection applications.
- Designed and implemented a computer vision pipeline to detect and segment greenhouses from satellite imagery using YOLOv8 and U-Net models.
- Developed Python scripts for automated image tiling, model inference, and geospatial post-processing (GeoTIFF → Shapefile/GeoPackage).
- Processed and analyzed large GeoTIFF datasets, ensuring accurate coordinate reference systems (CRS) and spatial alignment for QGIS visualization.
- Converted AI model outputs into georeferenced polygon layers and computed real-world area estimates for mapping and agricultural insights.

Data Analyst (Project Based), Real Estate Company**,** Lebanon   **June 2024 – Sept 2024**

- Developed real estate management systems to organize and track rental contracts, property usage, invoices, and client records using Microsoft Excel.
- Monitored due payments and rental income to support pricing and management decisions.
- Introduced a data-driven approach to business operations and created data visualizations using Python.

EDUCATION

Bachelor of Science in Data Science, University of Saint Joseph, Lebanon   **2025**

➢ **Graduation Project (Grade A)**

Customer Personality Analysis – Data Storytelling Project

- **Tools & Software:** Python (data cleaning, preprocessing, modeling), Power BI (visualization)
- Analyzed over **10,000 customer records** from a hypermarket through data cleaning, preprocessing, and feature engineering, including category consolidation and age calculation.

- Performed **exploratory and deep data analysis**, covering distribution, demographic, and spending behavior to uncover customer patterns and segment profiles.
- Conducted **modeling using multiple machine learning algorithms** for segmentation, campaign response prediction, loyalty assessment, and churn detection (K-means clustering).
- Integrated analytical results into **Power BI dashboards**, visualizing customer engagement, campaign performance, and spending insights.

UNIVERSITY PROJECTS

Final Natural Language Processing Course Project (Grade A)
Project Title: *Emotional Tone Analyzer for Journal Entries*

- **Tools & Software:** Python, NLP libraries (NLTK, TextBlob)
- Developed a program that analyzes users' journal entries to detect emotional tone.
- Transformed the analyzed text into visual emoji representations to reflect mood and sentiment.

Final Artificial Intelligence Course Project (Grade A+)
Project Title: *AI-Based Decision System for Snake and Ladders Game*

- **Tools & Software:** Python, Machine Learning (Alpha-Beta Algorithm)
- Redesigned the traditional Snake and Ladders game by integrating AI-driven decision-making using strategic "card" mechanics.
- Applied search algorithms to enable adaptive gameplay and intelligent move prediction.

Final Big Data Course Project (Grade A)
Project Title: *Cardiovascular Disease Data Analysis*

- **Tools & Software:** Python, Pandas, NumPy, Matplotlib, Jupyter Notebook
- Analyzed large datasets of cardiovascular patients to study profiles, health cases, and diagnostic outcomes.
- Performed data pre-processing, visualization, and statistical analysis to identify key health indicators.

Final Data Visualization Course Project (Grade A)
Project Title: *Interactive Power BI Dashboards*

- **Tools & Software:** Microsoft Power BI
- Cleaned and transformed raw datasets to prepare them for analysis.
- Designed interactive dashboards and visual reports to represent trends and insights effectively.