

Manuel Hanna

Data Scientist

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PROFESSIONAL EXPERIENCE

Software and Data Analytics Engineer: *Lighty AI Inc. (Boston, MA)* April 2024 - September 2024

- Built Product Metrics Dashboard: Developed and launched a Product Metrics Dashboard tracking DAUs, MAUs, and retention metrics, boosting user engagement by **11%** in the **DAU/MAU ratio**. Achieved **100% data quality** on **Amplitude** through accurate user interaction tracking, delivering real-time insights for optimized product decisions.
- Enhanced AI Performance and **Data Validation** for Accuracy: Fine-tuned **language models** using advanced prompt engineering techniques such as **zero-shot**, **few-shot**, and **chain-of-thought**, leading to more accurate responses. Integrated OpenAI Whisper for AI audio features and refactored **AI agents**, improving response times by **25%**.
- Designed **LLM Agent & API** Integration: Developed an **AI agent** for detecting time zones and locations in conversation threads, integrated **LangGraph** for LLM processing. Mocked Auth0 to reduce overhead during unit testing, while implementing FastAPI endpoints with PostgreSQL for user onboarding.

Data Engineer: *InflueAnswers (Boston, MA)* January 2023 - December 2023

- Revolutionized Website Data Collection: Architected and executed a complete overhaul of Python-based ETL pipelines, catapulting data collection **efficiency by 60%**. This critical enhancement empowered real-time analytics and elevated TF-IDF analysis via cosine-similarity for pinpointing content relevancy.
- Elevated Data Quality: Pioneered the adoption of advanced data cleaning and transformation strategies using Python libraries (Pandas, NumPy) and SQL. This leadership resulted in an **80% surge in data integrity**, drastically improving the foundation for analytics and strategic decisions.
- Transformed Web Scraping Accuracy: Engineered and implemented cutting-edge web scraping methodologies using Python (BeautifulSoup, Selenium, Scrapy) and sophisticated extraction techniques. Initiative secured an **87% accuracy rate** in data extraction, foundational for robust analytics and precision in data-driven strategic planning.

Data Engineer Intern: *Reesby (Melbourne, Australia)* July 2022 - October 2022

- Project Efficiency Enhancement: Directed a 7-member data science team to a **30%** increase in project efficiency using agile methodologies, streamlining workflow and enhancing team collaboration.
- Document Management Overhaul: Overhauled document processing with Python's NLTK and SpaCy for automatic categorization and summarization, cutting processing times by **40%**.
- Recruitment Process Improvement: Created a recruitment tool with TensorFlow, reducing recruitment cycle time by **25%** and improving candidate selection through data-driven insights

Information Systems Specialist: *ESA Business School (Beirut, Lebanon)* May 2019 - October 2020

- Moodle LMS Setup and Deployment: Established the design and implementation of a customized Moodle LMS, employing FTP for effective file management and integrating advanced data processing with Python and SQL. This strategic approach led to a **35% increase in course engagement** and a **25% rise in platform usage**.
- HubSpot CRM Integration and Data Strategy: Initiated the integration of HubSpot CRM, focusing on data compatibility through advanced SQL and Python preprocessing. Automated key workflows, achieving a 40% increase in marketing efficiency and a **50% rise in lead conversion rates**. Acted as the principal HubSpot liaison, ensuring seamless coordination with the IT department.

EDUCATION

Northeastern University - Boston, MA September 2022 - May 2024

Master of Science in Data Analytics Engineering, Thesis defended Cumulative GPA: 3.77/4.0

Relevant Coursework: Big Data Management, Machine Learning and Analytics, Geospatial Analysis, Statistical Methods

SKILLS

Technical: Python, R, Java, MySQL, PySpark, Hadoop, Bash

Software: GIT, AWS, SAP Business One, Tableau, Metabase, Digital Ocean, ArcGis, Docker, Kubernetes

Languages: English – Full Professional Proficiency | French – Bilingual | Italian – Basic | Arabic – Native

Certifications: Amplitude Practitioner, Introductory AI Literacy, Microsoft Azure Fundamentals - AZ 900, Web-Development Bootcamp, Java Programming Masterclass, Social Affairs Certificate of Commendation

ACADEMIC THESIS

Global Indices Unveiled: Mapping the Nexus Between Conflicts and Vital Global Metrics Northeastern University

Executed an analysis of political conflicts and global indices (Global Peace, Ecological Threat, Positive Peace) using GIS and Python (Pandas, NumPy). Achieved **85% predictive accuracy** with K-means clustering and Graph Neural Networks using Random Forests from scikit-learn. Validated results statistically and visualized them with interactive Tableau dashboards, influencing policy insights.