

Karim DERBALI

Chicago, IL | karim.derbali@outlook.com | +1 (770) 765-5189 | linkedin.com/in/karim-derbali

PROFESSIONAL EXPERIENCE

Software Engineer Intern

Apr. 2024 - Jul. 2024

Delta Air Lines, Transatlantic Revenue Management

Atlanta, GA

- Automated the matching of concurrent airlines to calculate fares, using Python and SQL
- Developed 2 data analytics and visualization tools used daily by pricing managers for price calculation and optimization on transatlantic routes

Software Engineer, Part-Time

Sep. 2021 – Apr. 2024

Air France - KLM, Revenue Management and Pricing

Paris, France

- Designed and developed 4 Decision Support tools using Angular/Node and C++ to improve pricing strategies
- Built the ETL Process of these tools (Data Extract, Transform and Load) using Python, Pandas and MongoDB
- Led the development of a Pricing Tool that matches competitor fares
- Trained the team on the implementation of a PostgreSQL database

Data Engineer Intern

Apr. 2021 – Jun. 2021

KALYA - AI Healthcare Startup

France

- Acquired (web scraping, APIs) and analyzed (statistics) metadata from scientific publications on health
- Optimized processing time to be 5 times faster (saved 4 hours per process) using multi-threading in Python
- Cleaned the data, set up and optimized its storage in a SQL database

EDUCATION

M.S. Applied Data Science

Dec. 2025

University of Chicago - Merit Scholarship Recipient

Chicago, IL

- Courses : Machine Learning, Databases, Time Series & Statistical Models, Data Engineering & Analytics, Financial Analytics, Bayesian Methods, Reinforcement Learning, NLP, Supply Chain Optimization

M.S. Computer Science

2024

Sorbonne University - University of Technology of Compiègne

France

- Courses : Statistics, Algorithms, Software Engineering, Machine Learning, Cloud, Networks/CyberSecurity
- Projects : High Performance, ETL, Real Time, Databases & Spark, Deep Learning & Computer Vision

B.S. Computer Science

2021

University of Science of Montpellier

France

- Courses : Object-Oriented Programming, Project Management, Linear Algebra, Graphs, Distributed Systems

PROJECTS

Research Assistant, Error Detection for Nissan Group | PyTorch, Anomalib

Sep. 2023 – Jan. 2024

- Developed and benchmarked unsupervised deep learning models for computer vision to detect errors in a car manufacturing factory, achieving a 97% F1 Score

Research Assistant, Real-time Activity Monitoring Software | Python, SQL

Sep. 2022 – Jan. 2023

- Developed a movement monitoring software using motion sensors and generating statistical reports to ensure the safety of the elderly

Top Prize Hackathons | PyTorch, OpenCV, REST APIs, React

2020 – 2023

- Computer Vision: End-to-end real-time error detection project in industrial production with Coca Cola
Used OpenCV and deep learning with PyTorch. Performance of 60 FPS with an inference time of 10 ms
- Software Engineer: Built a meteorological website overnight. Used React.Js and weather APIs in a 6-student team

TECHNICAL SKILLS

Languages: Python, SQL/NoSQL, Java, C/C++, MongoDB, C#, JavaScript, TypeScript, Go, R, VBA

Libraries: Pandas, NumPy, Scikit-Learn, TensorFlow, PyTorch, Matplotlib, Seaborn, OpenCV

Frameworks: Angular, Spark, Hadoop, Flask, Pytest, React, Spring, Node.js, Material-UI

Development Tools: Git, Docker, Kubernetes, CI/CD, AWS, Airflow, GCP, Azure

Certification: Google Associate Cloud Engineer