Axel Quiroga Caldera

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Personal Profile

Data Scientist with hands-on experience in data-driven roles, leveraging programming and machine learning to automate processes and extract insights. Eager to create real-world impact through innovative AI solutions and automation.

EDUCATION

Tecnológico de Monterrey

Monterrey, NL

B.S. in Data Science and Mathematics Engineering

August 2021 - July 2025

Email: axelq6346@gmail.com

• Events and Competitions: HackMTY (2021), Datathon (2023), Engineering Expo (2023), National School of Optimization and Numerical Analysis (2023), Cemex Hacks (2024).

EXPERIENCE

Ikusi

Monterrey, NL

Data Engineer Intern

September 2024 - July 2025

- Data Lake: Designed and implemented a Dockerized data lake architecture using Elasticsearch, developing Python-based data pipelines with Airflow for efficient data ingestion from several sources.
- **Approval Automation**: Streamlined interdepartmental approvals by designing and implementing an automated workflow for business opportunity approvals using Power Automate.

Cemex Monterrey, NL

IT Energy Analyst Intern

September 2023 - September 2024

- **Price Forecast**: Contributed to developing a multivariate model using LSTM to predict energy prices, enabling optimal consumption strategies and identifying cost-effective hours for plants all over Mexico.
- Automations: Streamlined automation across multiple areas using Python and Power Automate, reducing manual labor by up to 28%. Automated data extraction from diverse web sources using the requests library, collecting data on temperature, market behavior, and raw material prices to support analysis and develop accurate price prediction models.
- Full-Stack Development: Accelerated the full-stack development of the Operations and Energy web platform, implementing user roles, permissions, and energy consumption authorization for plants. Contributing to a unified platform to manage and monitor energy consumption, reducing time allocation by 22% and creating a seamless transition into the energy market.

Pogen Monterrey, NL

Data Analytics Intern

March 2023 - September 2023

- Affluence Index: Redesigned and implemented the index used to quantify growth in mall foot traffic, resulting in more accurate reports and insights for clients.
- Anomalies Detection: Consolidated multiple processes using Isolation Forest and Z-Score metrics to create a data quality validation process, enabling error detection and information loss in mall sensors across Mexico.

PROJECTS

• End-to-End ML Deployment on AWS: Deployed a complete ML workflow using MLflow on AWS (EC2, S3), built data pipelines on Kedro with Docker, and served models through FastAPI for scalable real-time inference.

SKILLS

- Programming Languages: Python, SQL, R.
- Libraries: TensorFlow, Scikit-Learn, Pandas, Airflow, Streamlit, LangChain, MLFlow, Boto3, FastAPI.
- Tech Stack: Linux, Docker, PowerBI, Git, AWS, AutomationAnywhere, PowerAutomate, Snowflake.
- Languages: Spanish (Native), English (C1 Advanced Proficiency).