Ezequiel Mussambe

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EDUCATION

Michigan State University | East Lansing, MI *May 2025*
Master of Science, Data Science

Michigan State University | East Lansing, MI *Dec 2019*
Bachelor of Science, Geographic Information Science and Cartography | **Minor in Mathematics and Economics**

RECENT EXPERIENCE

GIS Developer *Jun 2021– Aug 2024*
Hydrosimulatics, Lansing, MI

- Developed and maintained a data-driven global web mapping application using Angular, TypeScript, JavaScript, and Python, integrating Cesium, OpenLayers, WebGL, and Flask to streamline spatial data processing, exploration, and visualization.
- Streamlined the extraction, transformation, and delivery of spatial data to multiple internal platforms for environmental modeling and spatial analysis.
- Collaborated with cross-functional teams including hydrologists, environmental engineers, and developers to ensure new features were functional, intuitive, data-driven, user-friendly, and aligned with project goals and client needs.

GIS Data Analyst *Mar 2020 – May 2021*
Hydrosimulatics, Lansing, MI

- Conducted data wrangling, feature engineering, and statistical analysis on well and soil quality datasets using Python and Excel to generate insights for environmental assessments.
- Built Python APIs and integrated spatial datasets from WMS, WFS, and WMTS services using Pandas, NumPy, and OWSLib to support large-scale, multi-region GIS projects.
- Automated borehole lithology calculations (e.g., thickness, elevation, material classes), improving processing speed and reducing manual effort.
- Collaborated closely with cross-functional teams to ensure data accuracy, enhance workflows, and align geospatial analysis with project goals.

SKILLS

GIS and Spatial Analysis: ArcGIS, QGIS, Google Earth Engine, GDAL, PostGIS, Leaflet, OpenLayers, Cesium
Programming: Python, R, TypeScript and JavaScript
Web Development: Angular, Flask, Django, Streamlit, REST API
Machine Learning and Data Pipelines: Pandas, Scikit-Learn, TensorFlow, PyTorch, Jupyter Notebook, Pyspark, Databricks, Apache Hadoop,MLOps, MLFlow, ETL and ELT
Database: SQL Server, PostgreSQL, Realtime Database, Firestore, MongoDB(basic)
Cloud and DevOps: S3, Google Cloud Storage, Firebase Hosting(basic), Jenkins, Docker, Kubernetes, CI/CD
Project Management and Collaboration tools: Git, Microsoft 365 tools

PROJECTS

Time Series Forecasting of Vehicle Collisions *Apr 2025*
Michigan State University, East Lansing, MI

- Developed data pipeline and trained LSTM, GRU, Random Forest, and XGBoost models for hourly collision prediction, and built spatial-temporal features and visualizations to support urban safety initiatives.

Spatial Autocorrelation and Proximity Analysis of Cyclist Injuries *Jan 2025*
National Student Data Corps, NYC

- Identified injury hotspots using spatial autocorrelation (Moran's I), proximity analysis, and created interactive maps.
- Presented findings to U.S. DOT Federal Highway Administration.

LANGUAGES

English (Fluent) | Portuguese (Fluent)