Ezequiel Mussambe
Haslett, MI |517 455- 3585|

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 & Economics

- MSU Dean's List: 8 Semesters

EXPERIENCE

GIS Developer — Jun 2021– Aug 2023
Hydrosimulatics | Lansing, MI

- Developed and maintained a scalable global web mapping platform using Angular, OpenLayers, TypeScript/JavaScript, and Python, enabling advanced spatial analysis and significantly enhancing client engagement through immersive geospatial data visualization and processing
- Integrated 3D capabilities using Cesium and WebGL for interactive raster and vector data visualization, improving data accessibility and analytical depth
- Designed and deployed RESTful APIs for seamless access to spatial features, classification, and analysis enhancing usability and enabling real-time geospatial intelligence
- Collaborated with UI/UX designers and project stakeholders to ensure tools were intuitive and aligned with end-user needs, promoting higher adoption rates across internal and external users
- Supported the company's mission to deliver data-driven solutions by cultivating a collaborative environment that emphasized open communication, shared problem-solving, and continuous improvement

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

- Automated borehole lithology calculations including thickness, elevation, depth, and material descriptions using Python and TypeScript, reducing manual processing time by over 50% and enabling the team to focus on high-value analysis and faster project delivery
- Searched for and identified reliable sources of wells and borehole lithology datasets, extracted, documented, and analyzed the data through EDA and feature engineering to derive actionable insights for environmental assessments
- Analyzed chemical element distributions in well data, aiding hydrogeochemical evaluations and risk identification
- Streamlined spatial data acquisition by extracting and integrating datasets from WMS, WFS, WCS, and WMTS services using python libraries (e.g., Pandas, NumPy, OWSLib), enabling the company to rapidly scale geospatial analyses and to efficiently handle multi-region GIS projects
- Built dynamic APIs in Python and SQL to automate spatial data access, classification, and reporting
- Collaborated closely with cross-functional teams to ensure data accuracy, improve workflows, and align geospatial analysis with project goals

Undergraduate GIS Research Assistant — May 2019 – Aug 2019
Landscape Ecology & Ecosystem Science Lab | East Lansing, MI

- Collaborated with a research team to analyze land cover classification using computer vision models and remote sensing techniques in ArcGIS, Google Earth Engine, and Pix4D, improving the accuracy of geospatial analyses
- Processed and analyzed aerial and satellite imagery using eCognition algorithms for automated geospatial pattern recognition in ecological research applications
- Developed Python-based image processing scripts using ArcPy for geospatial data transformation, enhancing ecological modeling workflows
- Conducted fieldwork by collecting and entering data into Excel sheets, and interpreting spatial and nonspatial data related to photosynthetic activity and soil properties to support sustainable agriculture initiatives
- Assisted in analyzing albedo and crop health data to improve ecological modeling for land use applications

SKILLS

GIS & Spatial Analysis:

- ArcGIS, QGIS, Google Earth Engine, GDAL, PostGIS | Remote Sensing & Image Processing | Web Mapping & Visualization (Leaflet, OpenLayers, Cesium)

Programming & Development:

- **Advanced:** Python | JS | Angular Development| TS | Flask | Django || API Development (REST API, JSON API) | HTML/CSS
- **Intermediate:** SQL Server | R | Streamlit| Objective-Oriented Programming |Web Development
- **Basic:** AWS cloud | Google cloud | Microsoft products

Data Processing & Machine Learning:

- Spatial Data Pipelines | Raster Processing | AI/ML for GIS | Big Data (Apache Hadoop, Databricks) & Statistical Modeling| Scikit-Learn & TensorFlow & PyTorch | Jupyter Notebook

PROJECTS

Explorer-Transportation Data Science Project (TDSP) Jan 2025

Northeast Big Data Innovation Hub & National Student Data Corps | US

- Conducted data-driven research to enhance road safety for vulnerable road users
- Applied data science methodologies, including data preprocessing, feature engineering, and machine learning, spatial and time series analysis to analyze transportation datasets
- Developed predictive models to assess accident risks and improve decision-making
- Created interactive visualizations to communicate findings effectively
- Collaborated with the U.S. Department of Transportation Federal Highway Administration to address real-world transportation challenges

LANGUAGES

Portuguese (Native), English (Full professional)