Guillermo Romero

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EDUCATION

Master of Environmental Data Science, 3.76 GPA (June 2023)
Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)
Highlighted Coursework: Machine Learning in Environmental Science, Databases and Data Management, Modeling Environmental Systems, Statistics for Environmental Data Science

Bachelor of Arts in Geography, 3.52 GPA (June 2022)
Bachelor of Science in Earth Science, 3.52 GPA (June 2022)
University of California, Santa Barbara (UCSB)
Honors/Awards: UCSB Scholarship, Outstanding Achievement in the Geography Major
Highlighted Coursework: Advanced Remote Sensing, Ocean Remote Sensing, Technical GIS, Field Studies in Geological Methods, Field Hydrology, Introduction to Climate Modeling

SKILLS

Languages: Spanish, R (tidyverse), Python (Pandas, Sci-kit), Markdown, SQL, MATLAB
Environments: RStudio, Quarto, VSCode, ArcGIS Pro, QGIS, GitHub, Google Earth Engine, Jupyter Notebook
Technical: Data Visualization, Machine Learning, Technical Writing of Environmental Field Work

Master's Capstone Project - Informing Forest Conservation Regulations in Paraguay (1/22–Present)

Client: Paraguay National Forest Institute; Dr. Robert Heilmayr | Role: Machine Learning Engineer

- Assessed land use plan compliance and deforestation rates in the Paraguayan Chaco, determining that 78% of properties exhibited land use compliance utilizing geospatial overlays.
- Developed a law-based geospatial simulation tool in R to estimate protected forest area under different laws in the undeveloped Chaco region, observing a difference of 3,397,183 ha between the least and most stringent scenarios.
- Created a Random Forest model and Google Earth Engine workflow in Python for data acquisition and preprocessing, predicting future deforestation patterns and generating pixel-wise probabilities of near-future deforestation.
- Supplied an interactive Shiny dashboard for stakeholders to examine results, guiding informed decisions on forest conservation and land use policies.

GEOSPATIAL & DATA SCIENCE PROJECTS

Burn Severity with Sentinel-2 data using Google Earth Engine | Working with Environmental Data (12/22)

- Burn severity analysis of the August Complex Fire using Sentinel-2 Image Collection and MTBS Feature Collection.
- Utilized Google Earth Engine and Python to process and visualize the difference normalized burn ratio (DNBR) by severity class.
- Leveraged the GEE platform to process and analyze large-scale satellite data efficiently and effectively.

Statistical Analysis of NDVI in Redlined Regions | Statistics for Environmental Data Science (11/22)

- Conducted data wrangling and exploratory data analysis (EDA) using tidy format in R.
- Conducted statistical analysis of NDVI data in redlined regions using Log-Log Ordinary Least Squares Regression and hypothesis testing to draw informed conclusions on non-linear relationships.
- Interpreted regression coefficients to understand the impact of individual variables on the overall outcome.

Analyzing Greenness through NDVI in Redlined Areas in Philadelphia, PA | Undergrad Thesis (4/22–6/22)

- Preprocess Landsat 8 OLI satellite data using RStudio to crop, mask, reclassify, and NDVI calculations.
- Conducted QGIS processing to calculate NDVI, zonal statistics, and write memory function.
- Integrated census median income, NDVI, and Redline data through QGIS and Excel.

LOGISTICS EXPERIENCE

General Warehouse Worker – Best Buy, Los Angeles, CA (9/18/-9/21)
SWAT Inventory Specialist – Best Buy, Los Angeles, CA (5/2010 – 11/2015)