

Robert Carroll

Miami, FL | (305) 905-7709 | robandrewcarroll@gmail.com

Portfolio: <https://robbiecarroll.com>

Exploring the world spatially and scientifically through technology and data analysis.

Python | SQL | Advanced Statistics | Data Analysis | Scripting and Automation
ArcGIS Pro | ArcGIS Enterprise Admin | Deep Learning | Web Development | Linux Server Administration

EDUCATION

Master of Science in Data Science - In Progress– University of Miami

Relevant Coursework: Machine Learning, Advanced Statistics, Python, Linear Algebra

Bachelor of Science in Geography and Sustainable Development - August 2021– University of Miami

Relevant Coursework: Spatial Data Analysis, Geographic Information Systems I & II, Geographic Research Methods, Remote Sensing of the Environment, Calculus I & II

Associate of the Arts in Business – Miami-Dade College

Relevant Coursework: Business Statistics, Basic data management in MS Excel

RELEVANT EXPERIENCE

GIS Analyst II – Center for Southeastern and Tropical Advanced Remote Sensing (CSTARS) - University of Miami

June 2022 – Current

Miami, FL – 40 hours/week

- Ordering (“Tasking”) custom Synthetic Aperture Radar (SAR) imagery from satellite vendors using multiple beam modes and other settings.
 - Documenting key information across multiple systems for fiscal management spreadsheets.
- Coordinating the tasking of SAR imagery across multiple different projects and their respective requirements.
- Analysis of SAR imagery, optical imagery, and altimetry multidimensional rasters for target attributes.
 - Normalized Difference Indexes, Land Use Land Cover, K-Means Clustering, ect.
 - Development of Machine/Deep Learning Models
 - Applying the scientific method to analysis.
- Python scripting to build automated processes to download, extract, and analyze imagery and create output datasets for statistical analysis.
 - Connecting and fetching data from REST APIs.
 - File structure management.
 - Data extraction and conversion for vector and raster data.
- Scripting statistical analysis, graphs, and other visual aids using Python (SkLearn, Matplotlib, Numpy, etc.).
 - Validation of data against real world data.
- Creating, analyzing, and managing products and projects using ArcGIS Pro.
 - In depth ability to use the program for both vector and raster data types.
 - Utilizing Deep Learning Models for labeling objects and for pixel classification of target features.
 - Map layout creation.
- Leveraging of Jupyter Notebooks and the ArcGIS Python API (arcpy).
- Managing/Content Creation on ESRI Portal:
 - Creating/editing Story Maps.
 - Creating/editing Dashboards.
 - Complex configurations and triggers to dynamically display information in extremely large datasets.
 - Aesthetically pleasing visual design.
 - Dataset consolidation.
 - Management and uploading of shapefiles and other GIS products.

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GIS Analyst I – Broward County Urban Planning Division

April 2022 – May 2022

Plantation, FL – 40 hours/week

- Creating map layouts of various sizes with relevant county information in line with county map creation and design standards.
- Printing the map layouts to specific size requirements on large format Epson printers.
- Managing/Content Creation on ESRI Portal:
 - Creating/editing Dashboards.
 - Complex configurations and triggers to dynamically display information in extremely large datasets.
 - Aesthetically pleasing visual design.
 - Management and uploading of shapefiles, maps, and other GIS products.
- Managing/Content Creation on ArcGIS online:
 - Jupyter Notebook Python scripting for automating file management.
 - Map Creation
- Creating, analyzing, and managing products and projects using ArcGIS Pro.
 - Map layout creation.
 - Process creation using Jupyter Notebooks, Python, and SQL in Oracle databases.
 - Automated process to email core systems users to manage and organize metadata based on existing user roles in ESRI Portal.
 - Anaconda environment development to facilitate the hand off of the process management.
- Competition of NIMS FEMA Training (National Incident Management System).
- Completion of multiple ESRI Training Learning Plans.
- Connecting and serving other county departments as a GIS departmental liaison.

Academic Educational Technologist – University of Miami Information Technology

December 2019 – March 2022

Miami, FL - 40 hours/week

- Cleaned, manipulated, and analyzed raw data using SQL and created reports with visualizations based on the data via MS Excel and Power BI.
- Automated script management and debugging in Python and JavaScript.
- Web Development in PHP, HTML, JavaScript, and CSS to fix redirect and display issues with the website.
- Created SQL queries from formal and ad hoc data requests to draw insights and make data-driven recommendations to characteristics to assist university departments with accreditation.
- Development and management of automated processes via Python, SQL, and Bash to create and send reports such as basic system usage statistics and large amounts of grade data for statistical analysis.
- System administration, web development, and data management for critical university systems such as the Blackboard LMS, EAB Navigate, and others. These systems provide core services for online learning to the university.
- Scraping, concatenation, and integration of data from web sources using Python, Jupyter Notebooks, and Selenium. Not all systems are connected, but we need to compare large data sets to ensure things are operating correctly on different systems, or to figure out the scale of system level problems.
- Tier 2 & 3 client support for VIPs, Deans, the President of the university, and important systemic issues that require immediate attention.

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Help Desk Technician – University of Miami Information Technology

February 2015 – December 2019

Miami, FL – 37.5 hours/week

- Phone, email, and in-person technical support and instruction. Meeting with departments and users to help them optimize the usage of the system and solve their problems.
- Graphic design of department branded Blackboard educational & promotional materials.
 - Physical and Interactive Flyers and material.
 - Web development for event management processes into our website using PHP.
- Documentation creation for all user system processes to aid in support materials.
 - [Instructional & educational video creation via Adobe Premier.](#)
- Aiding and instructing faculty, staff, and students with software and technologies.
- Finding work arounds to technical problems using coding and web development.
- User interface optimization for websites such as our primary learning management system and our WordPress documentation website.
- Excellent written and verbal communication of complex ideas.
- Monthly, weekly, and daily statistics kept of interactions and usage to improve service and identify system level problems.
- Light Back-end coding procedures for database driven systems such as our enrollment systems.

PROJECTS

University of Miami, Miller School of Medicine, Data Export | Student Grade Data

- We were contacted to assess the potentiality of a data export on live student data. This data was acquired and extracted using exploratory data analysis via SQL. I then scheduled processes on our RedHat Linux Server using multiple programming languages and multiple complex table joins via SQL and regular expressions to extract the specified data for specific time periods to be uploaded to an Azure Data Lake via Del Boomi.

University of Miami, Blackboard Institutional Hierarchy | Python Data Management & Concatenation

- Created a browser-based Python script in Jupyter Notebooks to hit an API and parse through and concatenate data for different identifiers for thousands of courses and unique student records. This was done via lists and dicts and the data was used to automatically create a flat files that would be uploaded manually into Blackboard to create the relationships between courses, students, and their management nodes so other schools and departments could manage their own courses and users securely.

University of Miami, Center for Computational Science | Internship (3 Months)

- Las Flores, Colombia: Informal housing & community survey analysis.
- During the spring of 2019, I was afforded an internship opportunity at the University of Miami Center for Computational Science, aka CCS, as part of my coursework. My primary duty was to assist data scientist [Timothy Norris](#) with the spatial data analysis, data organization, and the creation of maps depicting data gathered about the informal housing community of Las Flores, Colombia. All images and materials on display in this article were produced by myself, in association with and guidance from data scientists Tim Norris and Christopher Mader.
- <https://robbiecarroll.com/gisprojects/informal-housing-community-survey-las-flores-columbia/>
- Full portfolio and other projects online at robbiecarroll.com

