RUBIERE RAMIREZ

Geoinformatician

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📍 **19 Barton Creek Street, Belmopan City, Cayo, Belize**

PROFILE

A geoinformatician with over six years of experience in proprietary geographic information systems (GIS), free and open-source GIS, spatial data programming, spatial database management, remote sensing, earth observation, and spatial data engineering.

EMPLOYMENT HISTORY

Geographic Information Systems Assistant,
Systems Development and Data Processing,
Statistical Institute of Belize.

📅 September 2022 – Present
📍 Belmopan City, Belize

- Supervise the GIS Technician and Data Processing Technicians.
- Administer and maintain spatial databases on PostgreSQL database with PostGIS extension.
  - ➢ Utilize SQL and Spatial-SQL within PostgreSQL with PostGIS to automate workflows by proficiently creating databases, schemas, tables, views, procedures, functions, triggers, events, users, roles, and efficiently granting privileges, ensuring streamlined access management and comprehensive data administration.
- Administer and maintain web applications on free and open-source software for geospatial (FOSS4G): GeoServer/Mapstore2.
- Administer and maintain web applications on commercial off-the-self (COTS) software: Portal for ArcGIS and ArcGIS Server.
- Perform earth observation on the built environment: create Sentinel-2 Geomedian satellite imagery with Google Earth Engine and use machine learning algorithms to predict build up areas.
- Create tools to automate and standardize the extraction, transformation, and loading (ETL) of non-spatial data and spatial data into spatial data repositories with R and Python.
- Create spatial features with R programming language and Python with Open Geospatial Consortium (OGC) Standards.
- Provide training and support to the Geospatial Information Unit and other departments at the Institute.
- Created a full stack PostgreSQL, Express, React, NodeJS web application to geovisualize spatial data.
- Created *{rvr2spatial}* a package in R programming designed to facilitate the ETL process from MariaDB to PostgreSQL database with PostGIS extension. The package also does quality assurance and quality control on the spatial data in PostgreSQL. The package can be inspected and forked here: https://github.com/Rubi3r3/rvr2spatial

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Geographic Information Systems Technician,
Systems Development and Data Processing,
Statistical Institute of Belize.

📅 July 2018 – September 2022
📍 Belmopan City, Belize

- Heads-up digitizes building footprints in ArcGIS suite of products and QGIS from Google Earth Pro and Environmental Systems Research Institute's World Imagery, Bing Maps, Open Street Maps, Satellite pour l'Observation de la Terre 7 (SPOT-7).
- Provide both digital web maps and hard copy maps for different departments at the Statistical Institute upon request.
- Perform Earth Observation Remote Sensing Techniques to detect changes in urban areas.
- Process aerial photos from drone imagery in QGIS and ArcGIS Pro.
- Assist with the preparation of Enumeration District Maps for the 2022 Population and Housing Census.

- Assist with the creation of maps in the SIB Census Dashboard with R programming and RStudio.
- Perform quality assurance and quality control on census spatial field data collected using ArcGIS, QGIS and R Programming.
- Automate the generation of spatial data with R programming language using OGC Standards.
- Implement Row level and column level security with table views on PostgreSQL database with PostGIS Extension.
- Implement Geofence, Geofence Data Rules and Geofence Admin Rules on Open-Source GeoServer.

Geographic Information Systems Technician,
Coastal and Marine Data Centre,
Coastal Zone Management Authority and Institute of Belize

📅 May 2017 – June 2017
📍 Belize City, Belize

- Implement Row level and column level security with table views on PostgreSQL database with PostGIS Extension.
- Updated building footprints for Caye Caulker using Google Earth Pro and existing building footprints data.
- Prepare maps for ground-truthing in Caye Caulker using updated building footprints and parcel data provided by the Land Information Center, Ministry of Natural Resources.
- Assisted with the collection of land use and building information in Caye Caulker using Open Data Kit for android devices.
- Processed data obtained from the open data kit for Caye Caulker using the building footprints Urban Land Use Data Processing Manual standardized by the Land Information Center at the Ministry of Natural Resources.

Stann Creek Field Representative,
Oceana in Belize

📅 2015 – 2016
📍 Stann Creek, Belize

- Represented Oceana Belize in the Stann Creek district with the public, community-based organizations, non-governmental organizations, and the business sector.
- Conducted presentations about Oceana in Belize at the Primary, Secondary and Tertiary level as well as to the community and business sector in the district.
- Canvassed neighborhood in the district with regards to their opinion on offshore oil exploration and exploitation in Belize as well as collect signatures against offshore oil.
- Recruited wavemakers (volunteers) in the district.
- Maintain and update a wavemaker database for the district.
- Organized public events in the district such as beach cleanups, mural unveiling, people's referendum anniversary event, among others.
- Procured venders for projects, provided logistics and reached out to the community for the events.

EDUCATION

B.Sc. in Natural Resource Management	📅 2014
University of Belize	📍 Belmopan City, Belize

Associate in Natural Resources Management	📅 2011
University of Belize	📍 Belmopan City, Belize

Associate in Arts	📅 2009
St. John's College Junior College	📍 Belize City, Belize
Majors: General Studies and Chemistry	

High School Diploma	📅 2007
St. John's College High School	📍 Belize City, Belize
Concentration: Biology, Chemistry and Physics	

SKILLS

R | Python | ArcGIS Pro | QGIS | Geographic Data Science | Data Engineering | Earth Observation | Remote Sensing | PostgreSQL with PostGIS extension | FOSS4G GeoServer | Web GIS (Mapstore2) | Geovisualization and Geocommunication.

ACHIEVEMENTS

✓ **Enterprise GIS in FOSS4G**
Developed and implemented an Enterprise Geographic Information Systems infrastructure exclusively with free and open-source software for geospatial: QGIS and PostgreSQL Database with PostGIS extension.

✓ **Web GIS in FOSS4G**
Deployed and maintained Open-Source GeoServer and Mapstore2 with Apache Tomcat on Apache HTTP Server on SIB's GIS Servers.

✓ **Web GIS Application for Census Progress Tracking**
Geovisualized census progress coverage by creating a web application using open standards: Mapstore2 Web Application created using GeoServer, PostgreSQL database with PostGIS extension and ETL process automated with R programming.

✓ **Web GIS Development: Full-Stack PERN Application**
Built and maintained a PostgreSQL with PostGIS extension, Express.js, React, Node.js geoportal to geovisualize the Statistical Institute of Belize's spatial data.

✓ **Created {rvr2spatial}**
A package in R programming designed to facilitate the ETL process from MariaDB to PostgreSQL database with PostGIS extension.

PROFESSIONAL DEVELOPMENT

- **Urban Area Classification through Remote Sensing and Machine Learning Techniques,** Facilitated by the Mexican National Institute of Statistics and Geography (INEGI), 27th to 24th May 2024.

- **Food Insecurity Experience Scale (FIES) and Sustainable Development Goal 2.1.2 Analysis Workshop,** Facilitated by the Food and Agriculture Organization (FAO) of the United Nations Statistics Division, 6th May to 10th May 2024.

- **A National Validation Workshop on Advancing Comprehensive Disaster Management (CDM) Blueprint Implementation**, Facilitated by the Caribbean Disaster Emergency Management Agency (CDEMA), Natural Disaster Facility (NDF) in the CARIFORM Programme, the European Union (EU), & the National Emergency Management Organization (NEMO), 11th October 2023.

- **III Workshop on the use of Big Data for Official Statistics,** Facilitated by the United Nations Big Data Regional Hub in Brazil, United Nations Statistics Division, Brazilian Institute of Geography and Statistics (IBGE), National Administrative Department of Statistics (DANE) Colombia, National Institute of Statistics (INE) Paraguay, 31st July, 2nd August and 4th August 2023

- **Caribbean Geospatial Webinar – End User Training,** Facilitated by the Caribbean Community Climate Change Centre and Caribbean Development Bank, September 2021.

- **Advance Spatial Data Analysis Using ArcGIS,** Facilitated by the Belize National Spatial Data Infrastructure, Ministry of Natural Resources and Total Business Solutions Ltd, October 2018.

- **Creative Communications Training,** Facilitated by ArcCorps, May 2015.

- **Leadership Training for Social and Environmental Justice,** Facilitated by the Belize Institute of Environmental Law and Policy, August 2014.

REFERENCES

Arlenie Rogers, Ph.D.
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Science Department,
Faculty of Science and Technology,
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