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Top Skills

Data Analytics
Satellite Imagery
PyTorch

Certifications

Data Visualization
Geospatial Analysis
Intermediate Machine Learning
Feature Engineering
AI/ML for Geodata Analysis

Shimon Francis

Senior Data Analyst
Vythiri, Kerala, India

Summary

I am a skilled Data Analyst with expertise in Geospatial Intelligence, Remote sensing, and Data Visualization. I specialize in processing and analyzing complex Geospatial Data to deliver actionable insights that support decision making. Proficient in tools such as Python, TorchGeo, Raster Vision, I bring a detail-oriented approach to solving problems and optimizing workflows. With a strong focus on precision and innovation, I excel in combining technical expertise with a commitment to impactful and efficient data solutions

Experience

Hypervine

2 years 2 months

Senior Data Analyst

June 2024 - Present (1 year 1 month)
Glasgow, Scotland, United Kingdom

Responsibilities:

• Developed an AI-based object detection model to identify various types of vehicles within mining sites, including Haul Trucks, Water Trucks, and other heavy machinery.

• Utilized vehicle detection outputs to estimate

emissions, contributing to Climate TRACE's efforts in monitoring and mitigating environmental impacts.

• Implemented pyroSAR workflow for SNAP automation such that human effort for finding coherence estimations using SNAP has been reduced to an extent such that large quantity of SAR data can be processed automatically with a limited time.

Accomplishments:

Successfully developed an object detection model using Raster Vision to identify and return vector bounding boxes for construction sites from oblique imagery. This project merges cutting-edge deep learning techniques with geospatial data analysis, automating detection processes in complex visual environments.

Key Highlights:

• Utilized Raster Vision for efficient model training and inference.

• Worked with GeoJSON vector-based training labels derived from oblique imagery, where Raster Vision converts these into bounding boxes for object detection and back to vector bounding boxes after prediction.

• Delivered accurate vector-based bounding boxes, seamlessly integrating into geospatial workflows.

This was an incredible experience at the intersection of computer vision and geospatial technology, pushing the boundaries of object detection in real-world applications.

Data Analyst

May 2023 - May 2024 (1 year 1 month)

Responsibilities:

• Developed workflows to compute coherence from Sentinel-1 SAR data for monitoring mining activities.

• Utilized coherence analysis to assess mining activity patterns and contributed to emissions estimation for the Climate TRACE initiative.

• Automated large-scale geospatial data processing

pipelines for accuracy and efficiency in emissions tracking.
• Collaborated with cross-functional teams to translate remote sensing outputs into actionable climate insights.
• Designed and developed a Power BI dashboard to visualize the results of coherence estimation for mining sites.
• Integrated Sentinel-1 SAR data outputs into interactive visuals, enabling stakeholders to easily interpret activity patterns and emissions estimates.
• Provided actionable insights by combining spatial analysis with dynamic data visualizations, contributing to the Climate TRACE initiative.
• Enhanced decision-making with intuitive charts, graphs, and geospatial overlays, ensuring accessibility for both technical and non-technical audiences.
Accomplishments:
• Developed a Python script to download high-resolution GeoTIFF images from a Tile Map Server (TMS) using the powerful tms2geotiff library.
Key Features:
• Utilizes KML files ensuring efficient and targeted downloads.
• Leverages the tms2geotiff library to produce high resolution GeoTIFF images, suitable for geospatial analysis and remote sensing applications.The downloaded GeoTIFF images can be used for training machine learning models.
2. Developed a Python-based workflow for coherence estimation in time-series InSAR data using pyroSAR, a large scale ESA SNAP API. Previously, the workflow relied on manually operating SNAP , which was time-intensive. The new approach fully automates the process through code, significantly reducing processing time and effort.

Cognizant

2 years 7 months

Senior Process Executive-Data

October 2021 - August 2022 (11 months)

Hyderabad, Telangana, India

Process Executive-Data
February 2020 - September 2021 (1 year 8 months)
Hyderabad, Telangana, India

NCESS
Project Intern
December 2018 - May 2019 (6 months)
Trivandrum

Thesis on 'Finding Directional wave spectrum and height of ocean waves using Video Remote Sensing'

Education

Indian Institute of Information Technology and Management-Kerala(IITM-K)

Master's degree, Computer Science with Specialization in Geospatial Analytics · (2017 - 2019)