

Rufai Omowunmi Balogun

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Education

MSc., Geo-Data Science

Copernicus Masters in Digital Earth

Thesis title: The Transferability of Visual-Language Pretrained Models to Remote Sensing Data.

Distinction

University of South Brittany, France

September 2021 - July 2022

MSc., Earth Observation and Geoinformatics

Copernicus Masters in Digital Earth

Distinction

University of Salzburg, Austria

September 2020 - August 2021

B.Tech., Meteorology and Climate Science

Bachelor's degree program

Thesis title: Climate Variability and its Implication on Vegetation Health in the Climatic zones of Nigeria.

CGPA: 4.71/5.00 (First class Honors)

Federal University of Technology, Akure

January 2015 - December 2019

Work experience

European Research Academy Bozen/Bolzano

EO Data Science Researcher

October 2022 - present

Bolzano, South Tyrol, Italy

- Managing operational processing pipelines (infrastructure and CI/CD) for the Alpine Drought Observatory (ADO) project,
- provided an automated approach for gap-filling ADO meteorological datasets and drought indicators during Kubernetes shutdown or in-house infrastructure maintenance,
- Research paper on "The Alpine Drought Observatory: an operational drought monitoring platform".

CDL GeoHUM Lab

Geospatial Analyst

September 2022 - October 2022

Salzburg, Austria

- Provided research on data integration and spatialization of PCODEd datasets from the IOM-DTM databases necessary for initiating an MDA in malaria-prone regions in the African Western Rift,
- Curated a population spatial indicator for assessing IDP camps and malaria risks (provided a web visualization),
- Provided a cost-benefit analysis for setting up an ArcGIS Image Server on the AWS Cloud Platform.

IRISA Group

Student Researcher

November 2021 - July 2022

Vannes, South Brittany, France

- Researched and developed a methodological framework for evaluating the "Transferability of visual-language models to remote sensing data" using a Visual Question Answering model framework.
- Developed and implemented a remote sensing visual question answering model using the element-wise and Multi-modal Tucker Decomposition fusion strategy using the PyTorch framework.
- Served as a project manager for a team of 8 international students to participate in the On Cloud N: Cloud Cover Detection Challenge

The Sixth Avis*Research Partner**May 2020 - December 2021**Ondo State, Nigeria*

- Co-developed the methodological framework for the User-consultation across 15 West African nations,
- Curated a database of Ocean Experts across West Africa for the EARWAC Project user-consultation,
- curated hydrometeorological datasets for flash flood and coastal flood vulnerability index computation,
- Presented project outcomes at the COP26, 2021 in Glasgow, UK and at the Living Planet Symposium, 2022, Bonn, Germany.

Space4Good*Geospatial Analyst Intern**July - September 2021**The Hague, Netherlands*

- Researched, reviewed, and implemented a workflow for individual tree-top identification and extracted their corresponding crowns from Aerial imageries using the one-stage object detector, RetinaNet (remote work coordinated within an agile project management framework).
- Provided technical documentation and analysis of results to project stakeholders during the Sprint reviews

Center for Space Research and Applications*Geospatial Analyst**January - August 2020**Ondo State, Nigeria*

- Completed research and analysis on urban land dynamics, malaria vulnerability mapping and flood vulnerability analysis, visual analysis of seasonal sea-surface temperature change.
- Produced and presented scientific literature reviews and statistical analysis of results

National Space Research and Development Agency*Research Intern**June - December 2020**Federal Capital Territory, Abuja, Nigeria*

- Co-implemented research projects on Urban Heat Islands, Drought and Flooding, Disease Mapping and Geomorphology,
- Led a group of 5 interns to provide a temporal analysis of weather data over the Lake Chad Basin. Produced cartographic visualization of data in forms of maps, charts, and tabular descriptions.

Community service

IEEE Geoscience and Remote Sensing Society*Young Professional Ambassador with the Industry relations portfolio**September 2022 - present*

Leading the Chapter Industry Outreach of the GRSS Industry Relations Portfolio across Europe and the MENA region.

UN MGCY Data Working Group*Member**September 2021 - July 2022*

Co-organized a 3-day 2021 UN Youth Hackathon in conjunction with the United Nations Statistical Division (UNSD) reaching over 130 active participants across the globe (Winning solutions were presented at the Youth Circles, 2022 in the UAE)

Care About Climate*Project Mentor**July 2018 - August 2019*

Served as a mentor to 10 young environmental professionals across the globe to help them implement their environmental sustainability projects in an efficient way as part of the Online Youth Exchange (now ClimAcademy)

World Oceans Day*Advisory Council Member**January 2018 - July 2019*

Led the representation of the World Oceans Day in Nigeria by organizing several e-conferences to train people on the use of the Plastic Pollution Lesson Plan to foster lifestyle and habit changes to reduce ocean plastic and unsustainable practices.

Technical skills

Skillsets	Remote Sensing, Geospatial Analysis, Machine Learning, Cloud and HPC, DevOps
Programming Languages/Tools	Python, Docker, Kubernetes, GDAL, Linux/Bash, L ^A T _E X, Git, Postgres/PostGIS, AWS, SLURM, QGIS
Others	Scientific research and writing, Agile project management

Awards and honors

2022	ESA Living Planet Symposium Student Grant
2020	ESA-Future Earth Joint Program Grant (25,000 euros)
2020	Erasmus Mundus Joint Master's Degree Scholarship
2020	Google Africa Developers Scholarship
2019	Best Graduating Student in Meteorology and Climate Science

Conferences

July 2023	International Geoscience and Remote Sensing Symposium
April 2023	European Geosciences Union General Assembly
December 2022	IEEE Young Professionals in Space Congress
July 2022	GI Salzburg, Salzburg, AUstria
May 2022	ESA Living Planet Symposium, Bonn, Germany
July 2021	ISDE/GI Week, Salzburg, Austria
May 2021	Conflict Early Warning and Early Action Conference (remote)

Workshops and trainings

May 2023	High Performance and Disruptive Computing in Remote Sensing Summer School
November 2022	ECMWF Machine Learning for Earth Systems Science
August 2022	Google Project Management Professional Certificate, Google (Coursera)
April 2022	Domain Adaptation and Generalization, Artificial Intelligence Doctoral Academy
January 2022	Advanced Language Processing Winter School, LIG Labs and NAVER Labs Europe
July 2021	PAISS Summer School, MIAI and PRAIRIE
June - July 2021	EO4GEO International Summer School: Intelligent Earth Observation, UNEP-GRID and ZGIS
April 2021	ZGIS Spring School: Data Science Methods within Geoinformatics, ZGIS, Salzburg
April 2021	SAR: Hazards, University of Alaska, Fairbanks (edX)
February 2021	RUS Remote Training: Ship Detection with Sentinel-1 using SNAP s-1 tool-box
December 2020	Copernicus MOOC (Online), ESA
November 2020	Geospatial Applications for Disaster Risks Management MOOC. UN SPI-DER, ISRO (Online)
September 2020	Going Places with Spatial Analysis (ESRI)
April 2020	Spatial Data Science: A Frontier in Analytics. (ESRI)

Presentations

- May, 2022** Enhancing Adaptation and Resilience against Coastal Multi-hazards along the West African Coasts (EARWAC), ESA Living Planet Symposium, Boon, Germany
- July, 2021** Burn severity mapping of California wildfires using Sentinel-2, ISDE/GI Week, Salzburg, Austria

Society memberships

European Geosciences Union
IEEE Geoscience and Remote Sensing Society
International Society for Photogrammetry and Remote Sensing

Language proficiencies

English Fluent/ Native
French A2 level based on CEFR Ratings (DELF exam)
Italian A1.3 level based on CEFR Ratings