

Odunayo David Adeniyi

Date of birth: 05/12/1993 | **Nationality:** Nigerian (Nigeria) | **Gender:** Male

WORK EXPERIENCE

11/2024 – CURRENT Viterbo, Italy

RESEARCH COLLABORATOR (POST DOC.) EURO-MEDITERRANEAN CENTER ON CLIMATE CHANGE (CMCC FOUNDATION)

- The design of workflow to combine and integrate in situ, meteorological and remote sensing data to develop a new indicator of the impact of climate extremes (i.e. drought and heat waves) on vegetation and ecosystem productivity.
- The fine-tuning of algorithms to calculate compound indicators and/or proxies (including consideration of related attributes like magnitude, duration, intensity, and timing) of multi-faceted (meteorological, hydrological, agro-ecological) droughts.
- The testing and evaluation of the drought indicator/s at the test sites in Europe.
- The definition of indicators and data required to support the development of a drought vulnerability assessment tool.

Business or Sector Professional, scientific and technical activities | **Department** Impacts on Agriculture, Forests and Ecosystem Services |

Email odunayodavid.adeniyi@cmcc.it | **Website** www.cmcc.it

12/2023 – 11/2024 Frascati, Rome, Italy

RESEARCH FELLOW (POST.DOC) EUROPEAN SPACE AGENCY (ESA)

- Developed and implemented an integrated approach for monitoring soil moisture content using Earth Observation (EO) data across West Africa.
- Applied artificial intelligence techniques to downscale ESA CCI combined passive and active soil moisture products.
- Analyzed the relationship between soil moisture and key environmental variables to enhance predictive models.
- Utilized cloud computing platforms for processing and analyzing large EO datasets.
- Mentored and supervised a research intern, providing guidance on data analysis and remote sensing techniques.
- Conducted training sessions and delivered seminars to Nigerian stakeholders, including NARSDA and NiMET, on EO data applications.
- Presented research findings at national and international conferences and engaged with diverse scientific audiences.
- Served on the Scientific Committee for the EO for Africa Symposium 2024, contributing to session planning and coordination.

Business or Sector Professional, scientific and technical activities |

Department Directorate of Earth Observation Programme, Application section/ESRIN (EOP-SDA) | **Email** Odunayo.Adeniyi@ext.esa.int |

Website www.esa.int

Link <https://eo4society.esa.int/2023/06/30/eo-africa-4-african-research-fellows-selected/>

10/2020 – 12/2023 Pavia, Italy

DOCTORAL RESEARCHER DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF PAVIA

- Analyzed digital soil mapping approaches for spatial prediction of soil properties.
- Optimized machine learning algorithms for spatial predictions.
- Conducted systematic reviews and authored publications.
- Served as a PhD tutor.

Business or Sector Professional, scientific and technical activities | **Department** Department of Earth and Environmental sciences |

Email odunayodavid.adeniyi01@universitadipavia.it | **Website** www.unipv.it

12/2021 – 03/2022 Jena, Germany

VISITING RESEARCHER DEPARTMENT OF GEOGRAPHY, FRIEDRICH SCHILLER UNIVERSITY JENA

- Assessing machine learning models for digital soil mapping

Business or Sector Professional, scientific and technical activities | **Department** Department of Geography

02/2019 – 06/2020 Debrecen, Hungary

UNIVERSITY RESEARCH ASSISTANT INSTITUTE OF WATER AND ENVIRONMENTAL MANAGEMENT

- Spatial data analysis
- PhD assistant
- Student Mentor

EDUCATION AND TRAINING

10/2020 – 12/2023 Pavia, Italy

DOCTOR OF PHILOSOPHY University of Pavia

- Machine learning for Geospatial modelling
- Satellite SAR interferometry as a supporting tool for the land subsidence
- Statistical Regression Models for Engineering Geology through R
- Scientific writing and Ethics in research
- Hands on Digital Soil Mapping

Address Via Ferrata 1, 27100, Pavia, Italy | **Website** <http://sciter.unipv.eu/site/home/persona/scheda720005275.html> |

Field of study Earth and Environmental sciences |

Thesis Advancing Digital Soil Mapping Approaches in an Agricultural Lowland Area (Lombardy Region, Italy)

09/2018 – 06/2020 Debrecen, Hungary

MASTERS OF SCIENCE University of Debrecen

- Water Resource Management and Water Quality Protection
- Agricultural Remote Sensing, Environmental Informatics
- Agrohydrology Agricultural Watershed Management,
- Agri Environmental Protection , Natural Resource Management, Nature Protection
- Precision Agriculture, Sustainable Agricultural Systems and Technologies, Agroforestry

Address Debrecen, Egyetem tér 1, 4032 , Debrecen, Hungary | **Website** <https://www.edu.unideb.hu/> |

Field of study Agricultural Environmental Management Engineering | **Final grade** 4.87/5.0 |

Thesis Wheat yield forecasting based on Landsat vegetation indices time series data and reported crop statistics

11/2010 – 10/2015 Akure, Nigeria

BACHELORS OF ENGINEERING Federal University of Technology, Akure

Address PMB 704, The Federal University of Technology Akure, Ondo State, 340252 , Akure, Nigeria | **Website** www.futa.edu.ng |

Field of study Agricultural Engineering | **Final grade** 4.17/5.0

DIGITAL SKILLS

Data Mining, Data Processing, and Data Analysis | Python | R - Programming | REMOTE SENSING | Digital Soil Mapping | SAGA Gis | GIS (Q-GIS, Arc-GIS) | Machine Learning | Parallel computing in HPC environment

LANGUAGE SKILLS

Mother tongue(s): **YORUBA** | **ENGLISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
ITALIAN	A2	A2	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

2024

[Downscaling ESA CCI soil moisture products: A Comparative analysis of Machine Learning algorithms over West Africa](#)

Ogunayo David Adeniyi; Zeleke Gebeyehu Abebe; Amazirh, Abdelhakim; Szantoi Zoltan; Schicking Anke

Link <https://zenodo.org/records/13885679>

2024

[Spatial prediction of soil organic carbon: Combining machine learning with residual kriging in an agricultural lowland area \(Lombardy region, Italy\)](#)

Odunayo David Adeniyi, Alexander Brenning, Michael Maerker, Geoderma, Volume 448, 2024, 116953,

Link <https://www.sciencedirect.com/science/article/pii/S0016706124001824>

2024
[Explorative analysis of varying spatial resolutions on a soil type classification model and its transferability in an agricultural lowland area of Lombardy, Italy](#)

Adeniyi, O.D.; Maerker, M., (2024). Geoderma Regional.

Link <https://www.sciencedirect.com/science/article/pii/S2352009424000324>

2024
[A Systematic Review on Digital Soil Mapping Approaches in Lowland Areas](#)

Adeniyi, O.D.; Bature, H.; Maerker, M. (2024). Land.

Link <https://www.mdpi.com/2073-445X/13/3/379>

2023
[Digital Mapping of Soil Properties Using Ensemble Machine Learning Approaches in an Agricultural Lowland Area of Lombardy, Italy](#)

Adeniyi, Odunayo David, Alexander Brenning, Alice Bernini, Stefano Brenna, and Michael Maerker.

Link <https://doi.org/10.3390/land12020494>

2023
[Hydrological Implications of Recent Droughts \(2004–2022\): A SWAT-Based Study in an Ancient Lowland Irrigation Area in Lombardy, Northern Italy](#)

Bernini, A.; Becker, R.; Adeniyi, O.D.; Pilla, G.; Sadeghi, S.H.; Maerker, M. Sustainability 2023

Link <https://www.mdpi.com/2071-1050/15/24/16771>

2021
[Wheat Yield Forecasting for the Tisza River Catchment Using Landsat 8 NDVI and SAVI Time Series and Reported Crop Statistics](#)

Nagy, A.; Szabó, A.; Adeniyi, O.D.; Tamás, J.

Link <https://doi.org/10.3390/agronomy11040652>

2021
[Assessment of a Yield Prediction Method Based on Time Series Landsat 8 Data](#)

Andrea Szabó, Odunayo David Adeniyi, János Tamás and Attila Nagy

Link <https://doi.org/10.2478/ahr-2021-0003>

2019
[WHEAT YIELD PREDICTION BASED ON MODIS NDVI TIME SERIES DATA IN THE WIDER REGION OF A CEREAL PROCESSING PLANT](#)

Szabó Andrea, Tamás János, David Odunayo Adeniyi, Nagy Attila

Link <http://dx.doi.org/10.31924/nrsd.v9i2.036>

2020
[Soil Management and Conservation: An Approach to Mitigate and Ameliorate Soil Contamination](#)

Oluwatosin Ayobami Ogunsola, Odunayo David Adeniyi and Victoria Abimbola Adedokun

Link <https://doi.org/10.5772/intechopen.94526>

● CONFERENCES AND SEMINARS

01/03/2021 – 04/03/2021 St. Petersburg, Russia

The international scientific conference “XXIV Dokuchaev Conference for Young Scientists” soil science in a Digital society

Participated and presented 'Digital Soil Mapping in a Lowland area: A case study of Lombardy Irrigation Area, Italy' online.

07/10/2021 – 10/10/2021 Napoli, Italy

BeGeo science conference

Participated and presented 'Mapping soil properties in a lowland area of Lombardy region using terrain attributes and different predictive modelling approaches'

23/04/2022 – 27/04/2022 Vienna, Austria

European Geophysical Union (EGU) general assembly

Participated and presented a poster online 'Assessing machine-learning algorithms for digital soil mapping in an agricultural lowland area: a case study of Lombardy region'

Link <https://doi.org/10.5194/egusphere-egu22-8560>

14/04/2024 – 19/04/2024 Vienna, Austria

European Geophysical Union (EGU) general assembly

Participated and presented a poster 'Assessing the Effect of DEM's resolution on Model Transferability of soil types: A case study of Lombardy region, Italy'

Link <https://meetingorganizer.copernicus.org/EGU24/EGU24-16425.html>

29/05/2024 – 31/05/2024 ESA-ESRIN, Frascati (Rome), Italy

Super-Resolution and Downscaling for EO and Earth Science (SUREDOS24)

Participated and presented a paper 'Enhancing Soil Moisture Resolution: Downscaling of ESA CCI SM Data over West Africa using Hybrid Model'

Link <https://suredos24.esa.int/agenda>

17/09/2024 – 19/09/2024 ECSAT, UK

SPAICE: AI in and for Space conference

Participated and presented a poster 'Downscaling ESA CCI soil moisture products: A Comparative analysis of Machine Learning algorithms over West Africa'

HONOURS AND AWARDS

01/12/2023

Africa Research Fellowship – European Space Agency and the African Union Commission

A fellowship awarded to carry out research activities for one year in ESA-ESRIN, Frascati.

Link <https://eo4society.esa.int/2023/06/30/eo-africa-4-african-research-fellows-selected/>

17/01/2022

ERASMUS+ Traineeship and travel grants – EU programme for education, training, youth, and sport.

ERASMUS+ Traineeship and travel grants to Friedrich Schiller University Jena as a Visiting Researcher.

01/10/2020

Department PhD scholarship – Earth and Environmental sciences, University of Pavia

A PhD scholarship awarded for 3 years under CE4WE (Circular Economy for Water and Energy) Lombardy region project.

01/09/2018

Scholarship for Christian Young People (SCYP) – Hungary Helps

A 2-year scholarship award to study Masters degree at the University of Debrecen, Hungary.

01/11/2012

Agbami Medical and Engineering Professional Scholarship Awards – STAR DEEP PETROLEUM LIMITED (A Chevron Company and Operator of the Agbami Field)

Five times recipient of this scholarship for maintaining academic excellence throughout my undergraduate studies at Federal University of Technology, Akure.