

Abdulamid A. Fakoya

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SUMMARY: PhD student in Meteorology with over 5 years of experience in analyzing global weather and climate data. My research is at the nexus of atmospheric science, data science, climate change, and environmental justice. Equipped with a strong Physics background and proficiency in various software tools and programming languages, I am committed to leveraging scientific research for climate change mitigation and its integration into societal development.

EDUCATION:

University of Oklahoma, Norman, OK. PhD. Meteorology (<i>expected 06/2026</i>) Research: Atmospheric Aerosols, Air Quality, Climate Change, Data Science & Machine Learning.	06/2021 – 06/2026
University of Oklahoma, Norman, OK. MS. Meteorology Thesis: Evolution of Absorbing Aerosol Properties during transport in the Southeast Atlantic	08/2021 – 05/2023
University of Ilorin, Ilorin, Nigeria MSc. Physics	10/2016 – 02/2019
University of Ilorin, Ilorin, Nigeria BSc. Physics	10/2010 – 07/2014

RESEARCH EXPERIENCE

Graduate Research Assistant, (CL)2EAR Group, University of Oklahoma, Norman, USA <i>Advisor: Dr Jens Redemann</i>	06/2021 – Present
<ul style="list-style-type: none"> • Conducting research on aerosol-radiation and aerosol-cloud interactions, with a specific focus on the evolution of smoke aerosols, their interaction with stratocumulus clouds, and their influence on the regional southeast Atlantic climate, using a combination of ground-based and satellite remote sensing, in situ observation, and model output. • Developed a novel methodology to investigate the changes in smoke aerosol properties from biomass burning and wildfires during long-range transport and atmospheric processing and the implication for climate forcing. • Evaluated satellite retrievals of smoke aerosols from MODIS using ground-based measurements from AERONET. • Participated in a 10-week US DOE-ARM-funded Small-Scale Variability of Solar Radiation (S2VSR) field campaign, with responsibilities including calibration and routine maintenance of 60 pyranometers. • Broad Impact: The research findings provides crucial insights into smoke aerosol absorptivity, its influence on atmospheric warming, solar energy balance, as well as its long-term effects on cloud interactions, regional precipitation patterns, and the terrestrial carbon cycle. Consequently, this study significantly contributes to our current understanding of climate dynamics and change. • Computation & Modeling: Expertise and Experience in Climate Data Analysis, WRF-Chem/CAM5 and NOAA HYSPLIT • Skills: Proficient in utilizing HPC/Supercomputing, Data Science, and Machine Learning Applications. 	
Graduate Research Student, University of Ilorin, Ilorin, Nigeria.	10/2016 – 02/2019
<ul style="list-style-type: none"> • Conducted MS thesis research employing advanced statistical methods and machine learning techniques to effectively classify and forecast severe weather events in Nigeria. • Impact: Proposed a thunderstorm intensity classification scale for integration into a novel national severe weather warning system. • Teaching: Facilitated academic excellence among undergraduates by delivering instruction and providing mentorship for capstone projects. 	

RESEARCH OUTPUT: (A) PEER-REVIEWED JOURNAL PUBLICATIONS – Total Citation Count (3), H-index (1)

<https://scholar.google.com/citations?user=LYj7bDgAAAAJ&hl=en>

1. **Fakoya, A. A.**, Redemann, J., Flynn, C. J., Saide, P. E., Gao, L., Mitchell, L., Howes, C., Pistone, K., Chang, I., Segal-Rozenhaimer, M., Leblanc, S., Dobracki, A.N., Sedlacek, A., Eck, T., Holden, B., Gupta, P., Lind, E., Zuidema, P. (*In Preparation, October 2023*). Changes in smoke aerosol absorptivity from biomass burning during atmospheric processing and long-range transport in the southeast Atlantic. *Atmos. Chem. Phy.*

- Kassianov, E., Flynn, C. J., Barnard, J. C., Berg, L. K., Beus, S. J., Chen, X., China, S., Comstock, J. M., Ermold, B. D., **Fakoya, A. A.**, Kulkarni, G. R., Nahar Lata, N., McDowell, N. G., Morris, V. R., Pekour, M. S., Rasmussen, J., Riihimaki, L. D., Shi, M., Shrivastava, M. B., Telg, H., Zelenyuk, A. (2023). Radiative impact of record-breaking wildfires from integrated ground-based data. *Nature Scientific Report* (In Review)
- Agbasi, J. C., Egbueri, J. C., Ayejoto, D. A., Unigwe, C. O., Omeka, M. E., Nwazelibe, V. E., Ighalo, J. O., Pande, C. B., & **Fakoya, A. A.** (2023). The Impact of Seasonal Changes on the Trends of Physicochemical, Heavy Metal and Microbial Loads in Water Resources of Southeastern Nigeria: A Critical Review. In J. C. Egbueri, J. O. Ighalo, & C. B. Pande (Eds.), *Climate Change Impacts on Nigeria: Environment and Sustainable Development* (pp. 505-539). *Springer International Publishing*. https://doi.org/10.1007/978-3-031-21007-5_25
- Aladodo, S. S., Akoshile, C. O., Ajibola, T. B., Sani, M. Iborida, O. A., **Fakoya, A. A.** (2022). Seasonal Tropospheric Aerosol Classification Using AERONET Spectral Absorption Properties in African Locations. *Aerosol Sci Eng.* (Springer/Q3). <https://doi.org/10.1007/s41810-022-00140-x>
- Fadina S. A., **Fakoya A. A.**, Akoshile., C. O., Ajibola T. B. (2020). Spatio-Temporal Variation of Downward Longwave Radiation over Nigeria. *Ilorin Journal of Science*. <https://doi.org/10.54908/iljs.2020.07.01.005>

RESEARCH OUTPUT: (B) CONFERENCE PRESENTATION AND ATTENDANCE

- Fakoya et al.** Exploring the Evolution of Light-Absorption Properties of Biomass Burning Emissions in the Southeast Atlantic Region. 2023 American Geophysical Union (AGU) Fall Meeting. (*Upcoming*)
- Fakoya et al.** Investigating the evolution of light-absorption properties of biomass burning emissions in the southeastern Atlantic region. 17th Graduate Climate Conference (GCC), November 2–4, 2023, Woods Hole, MA. (**Lead Oral Presenter**)
- Redemann, J., Flynn, C. J., Xu, F., Dubovik, O., Gao, L., Mitchell, L., **Fakoya, A. A.**, and co-authors. Advancements in observations of atmospheric aerosol absorption over the past 25 years. Workshop on “Recent advancements in remote sensing and modeling of aerosols, clouds and surfaces”. May 22-26, 2023. Lille, France.
- Fakoya et al.** Changes in Absorbing Aerosol Properties during Transport in the Southeast Atlantic. Paper #A35F-08, 2022 American Geophysical Union (AGU) Fall Meeting, December 12–16, 2022, Chicago, IL. (**Lead Oral Presenter**)
- Fakoya et al.** Evolution of Biomass Burning Aerosol Properties during Transport in the Southeast Atlantic Region, Poster #113, 16th Conference on Atmospheric Radiation, American Meteorological Society (AMS) Collective Madison Meeting, August 08-12, 2022. Madison, WI. (**Lead Poster Presenter**).
- **Award: Outstanding Student Presentation Award**
- Redemann, J., Gao, L., Flynn, C., Chang, I., Xu, F., Loria-Salazar, M., Lenhardt, E., **Fakoya, A. A.**, and co-authors. Observations of aerosols, clouds, and radiation in the NASA ORACLES project and their implications for future satellite missions. International Radiation Symposium 2022. July 4 – 8, 2022, Thessaloniki, Greece.
- Fakoya, A. A.** 102nd Annual Meeting, 2022 American Meteorological Society Annual Meeting (**Virtual**)

RESEARCH OUTPUT: (C) SERVICE

- Moderator**, 14th International Precipitation Conference, Norman, OK. **05/2023 – 06/2023**
 - Facilitated and chaired in-depth discussions on clouds, convection, and precipitation during the virtual cloud and convective workshop session of the conference and delivered pivotal outcomes to the conference conveners.
- Reviewer**, Journal of the Nigerian Society of Physical Sciences, **05/2021 – Present**
 - Serving as a reviewer for the Journal of the Nigerian Society of Physical Sciences, diligently evaluating and providing expert assessments on research articles, ensuring the highest standards of academic rigor and excellence.

LEADERSHIP AND COMMUNITY ACTIVITIES

- Committee Member**, Board of Student Affairs, American Meteorological Society. **04/2023 – Present**
- Serving on the Professional Development Committee, supporting the advancement of fellow members by convening development workshops and other initiatives.
- Representative**; Student Affairs Committee, School of Meteorology, University of Oklahoma. **06/2022 – Present**
- Serving as a proactive liaison between students, faculty, and management, effectively advocating for student interests and fostering productive communication channels.
- Docent**, National Weather Museum, Norman, OK **01/2022 – Present**
- Facilitating guided tours and leading visitors through exhibitions.
- Volunteer**, OU Food Pantry, University of Oklahoma. **01/2022 – Present**
- Actively involved on a team that is dedicated to tackling food insecurity on campus.
- Governor**; MSc Class, Department of Physics, University of Ilorin, Ilorin, Nigeria. **10/2016 – 02/2019**
- Facilitated effective communication and coordination between students, department staff, and the graduate school, overseeing lecture schedule adjustments, organizing group study sessions, and managing overall class activities.

ACADEMIC HONOURS AND AWARDS – Over \$150,000 in Tuition and Academic Excellence Awards

1. **2023-2025 UCAR Next Generation Fellowship**, University Corporation for Atmospheric Research. **10/2023**
2. **Douglas K. Lilly Scholarship in Climate Science**, School of Meteorology, University of Oklahoma. **04/2023**
3. **Robberson Travel Scholarship**, Graduate College, University of Oklahoma. **12/2022**
4. **Sibyl R. Weaver Scholarship**, University of Oklahoma. **04/2022**
5. **Memorial Scholarship**, University of Oklahoma. **04/2022**
6. **Sarkeys Foundation Scholarship**, University of Oklahoma. **04/2022**
7. **Qualifying Graduate Assistantship**, University of Oklahoma. **06/2021**
8. **Distinction in MSc**, Department of Physics, University of Ilorin. **02/2019**

ACADEMIC CERTIFICATIONS AND TRAINING

Machine Learning A-Z™: Python & R in Data Science, Udemy (Python, R, ML: Regression, SVR, Clustering)	In Progress
Data Scientist with Python (Career Track), Datacamp Inc. (Python, Statistics, Seaborn)	In Progress
Google Data Analytics Professional Certificate (Excel, R, Tableau, SQL)	12/2022
Climate Models, Downscaling and Assessments, South Central CASC, University of Oklahoma.	11/2020
Research and Proposal Writing in the Sciences, AuthorAID, INASP.	11/2020
Introduction to Climate Systems, South Central Climate Adaptation Science Center, University of Oklahoma.	10/2020
Elsevier Workshop: Secrets of Getting Published, Researcher Academy, Elsevier.	10/2020

OTHER PROFESSIONAL EXPERIENCE

- Consulting Associate (Carbon Sequestration – Climate)**, ICCEW, University of Oklahoma. **01/2023 – 05/2023**
- Conducted in-depth research and analysis of the global carbon market, with a specific focus on the voluntary carbon market, to identify trends, key players, potential growth areas, and competitive landscape.
 - Developed comprehensive strategies and recommendations for a sustainability startup to successfully enter the carbon offsetting service provider market, considering factors such as market positioning, target customer segments, value proposition, pricing strategies, and marketing approaches.
 - Collaborated with the startup leadership to introduce and promote the proprietary technology, which uniquely combines remote sensing, satellite imagery, and machine learning algorithms, to potential clients and stakeholders in the carbon offset market.
- Maintenance & Safety Officer**, University of Ilorin, Ilorin, Nigeria. **06/2016 – 06/2021**
- Spearheaded equipment operation and maintenance, ensuring optimal performance and uninterrupted broadcasting for the University's station.
 - Collaboratively supervised the successful installation of new FM transmitters and consoles, as part of a comprehensive overhaul maintenance project.
 - Performed comprehensive risk assessments and pioneered the development of Health, Safety, and Environment (HSE) resources and departmental protocols for implementing safe practices.
 - **Training:** HSE (1-3), WSO Occupational and Environmental Safety & Health, World Safety Organization.

MEMBERSHIP OF ORGANIZATION

Professional

American Meteorological Society (AMS)
American Geophysical Union (AGU)
American Association for the Advancement of Science (AAAS)
Nigerian Meteorological Society (NMets)

Others

OU Artificial Intelligence Club.
Nigerian Student Association, OU Chapter
OU SCAN - Student Chapter of the AMS.

SUMMARY OF TECHNICAL SKILLS:

Programming & Software: Python, MATLAB, R, HYSPLIT

Research: Data Collection, Proposal & Grant Writing, Scientific Reporting. **Data format:** NetCDF, HDF.

Data Science & Analysis: NumPy, SciPy, Seaborn, Scikit-Learn, PyTorch, tidyverse, ggplot2, plotly, Machine Learning.