Atijosan, Abimbola Oyewole

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National Space Research and Development Agency (NASRDA),
Advanced Space Application Laboratory (COPINE),
Obafemi Awolowo University Campus, Ile-Ife.

Professional Summary

An Engineer and researcher with over 14 years of experience in geospatial technologies, digital signal processing, machine learning, and digital transformation. I lead AI-driven projects in climate-smart agriculture, ecological shift mapping, and urban resilience, integrating remote sensing, digital signal processing, IoT, and GIS for sustainability. My work bridges technical innovation with policy impact, guiding digital governance strategies and fostering interdisciplinary collaboration. Passionate about fostering inclusive digital transformation, mentoring diverse early-career professionals, and advancing ethical data-informed decision-making for global challenges. Currently serves as Column Editor for the IEEE GRSS Magazine.

Current Position

Assistant Director, Advanced Space Application Laboratory, NASRDA
January 2025 – Present (Employed since 2011).
- Lead geospatial and AI-driven projects, including:
  - Climate-smart agriculture with IoT and remote sensing for precision farming.
  - Flood risk and ecological shift mapping using ML and GIS.
  - Land use and plastic pollution hotspot mapping to inform policy and sustainability.
- Collaborate with multi-sector stakeholders (government agencies, research institutions, and private sector) on climate strategies, digital governance and policy impact.
- Mentor researchers in GIS, remote sensing, and AI, building capacity for digital innovation fostering an inclusive digital transformation approach.
- Contribute to high-impact research through publications and presentations.

Some Major Projects:
- Climate-Smart Agriculture using IoT, remote sensing, and geospatial technologies
- Mapping and Monitoring Aquatic Plastic Pollution in Lagos: Mapping and monitoring plastic hotspots using remote sensing and machine learning techniques.
- Urban Flood Vulnerability Modeling: Developed models for assessing flood risks using fuzzy AHP and GIS techniques.
- Rapid Flood Mapping Using Open Access Earth Observation Data and Google Earth Engine (A Case Study of Lagos State, Nigeria)
- Agricultural Land Suitability Analysis: Led a project using Fuzzy AHP and GIS for decision-making in agricultural planning.
- Nigeria ecological shift mapping (2003 to 2023). Participated as a team lead in this project.
- Land Use Land Cover Evaluation of South West Nigeria: Utilized GIS and Remote sensing data to analyze land use and cover changes and trends in the region.
- Developing machine learning techniques for classifying high- and medium-resolution satellite images

Technical skills

- Digital Signal Processing | Remote Sensing (Optical and SAR) | Machine Learning
- Geographic Information System (GIS) | Spatial Data Processing | Antenna Design
- Systems and Design Thinking | Policy Analysis| Leadership and Team Management
- MATLAB | ArcGIS | Google Earth Engine (JavaScript) | Project Planning

Education: PhD (Elect/Elect Engineering), *Obafemi Awolowo University, Ile-Ife, Nigeria.*

Editorial Responsibilities

• Column Editor, IEEE Geoscience and Remote Sensing Society (GRSS) Magazine

2025 – Present

Peer Review for International Journals and Conferences

• Reviewer for:

- Information Processing in Agriculture
- International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA 2025)
- International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME 2025)
- International Journal of Electronics
-
- Journal of Telecommunication, Electronic and Computer Engineering

Leadership & Training Experience

- Mentoring early-career professionals and postgraduate students in satellite communication, space applications, digital transformation and geospatial sciences.
- Resource person for training programs and workshops on digital technologies, data analysis, and decision-making.
- Supervised MSc and PGD theses on geospatial applications, satellite communication and digital transformation.

Awards/Grants

- 2025: Karman Pioneer (2025), The Karman Project.
  Shortlisted as one of 50 global space leaders (from 400+ applicants across 77 countries) for the Karman Fellowship, recognized for AI-driven geospatial solutions.
- 2025: Performance and Achievement Award for Outstanding Role as Lead Instructor in the European Geosciences Union Climate-Smart Agriculture Project Grant. Presented by the Management of COPINE, NARSDA, on April 23, 2025
- 2025: Special Recognition Award for promoting organizational values and demonstrating consistent exemplary performance and dedication. Presented by the management of COPINE, NASRDA on February 3, 2025.
- 2024: Promoting STEM among Preteen Girls: IoT and Geospatial Technology in Greenhouse Farming, European Geosciences Union (EGU) Public Engagement Grant. Role: Co-applicant. €1,500.
- 2023: Mapping and Monitoring Aquatic Plastic Pollution Hotspots in Lagos, Nigeria, Royal Academy of Engineering UK: Frontiers Seed Funding Tranche 18. Role: Co-applicant. £19,210.
- 2022: Training grant sponsored by the Egyptian Agency of Partnership for Development in collaboration with the Egyptian Space Agency (EgSA) on Space Technology and Satellite Systems Applications. Held in Cairo, Egypt from the 11th to the 21st of December, 2022.
- 2017: Development of Wireless Communication-Based Vehicle Crash Detection and Reporting System, Nigerian Communications Commission (NCC) Research Grant. ₦3,545,266.00.

Professional Development & Conferences

- Certificate of training in Land Use Monitoring
  WEkEO workshop on LandUse monitoring organized by Mercator Ocean International. 1st - 2nd of February 2024.
- Certificate of training in Space Technology Satellite Systems.
  Egyptian Space Agency, Cairo, Egypt. 11th to 22nd of December 2022.
- Certificate of participation. Online training on Earth observation-based methodology for socioeconomic valuation of degraded lands and wetlands.
  Training facilitated by Geospatial Research International, RCMRD/GMES and Africa Union. 13th to 18th of December 2021.
- Certificate of training on Internet of Things applications in remote sensing and GIS.
  Obafemi Awolowo University (OAU), ICT-Driven Knowledge Park and African Regional Centre for Space Technology Education (July 2021)
- Certificate in remote sensing of coastal ecosystems
  NASA's online Applied Remote Sensing Training Program (September 2020)
- Certificate of training on remote sensing data for industries, agriculture and rational nature management.
  Peoples' Friendship University of Russia (October 2019).

Some Professional Development, Workshops & Conferences

- 2024: Rapid Flood Mapping Using Open Access Earth Observation Data and Google Earth Engine (A Case Study of Lagos State, Nigeria): Presented at the United Nations Workshop on GNSS and Related Space Technologies for Urban Sustainability Challenges, 18-23 November 2024 (Online).
- Participated in WEkEO for Coastal Interactions, organized by Copernicus and Mercator Ocean International, held online on December 4 and 6, 2024.
- 2024: WEkEO Workshop on Land Use Monitoring, Mercator Ocean International.
- 2023: Royal Academy of Engineering UK; Frontiers Symposium on Digital Tools for Environmental Degradation.
- 2021: Workshop on Internet of Things in Remote Sensing and GIS, OAU ICT-Driven Knowledge Park and ARCSSTEE.

Some Research Publications

- **Abimbola**, A., & Ibrahim, I. (in press). Flood Susceptibility Mapping for Lokoja Metropolis using a Pentagonal Integral Value Fuzzy AHP Model and Geospatial Techniques. *Journal of the Indian Society of Remote Sensing.*
- **Abimbola**, A., & Ibrahim, I. (2023). GIS-Based Flood Vulnerability Assessment Using Integral Value of Inverse Function Ranked Fuzzy-AHP Technique. *Covenant Journal of Informatics and Communication Technology*, 22-22.
- **Atijosan, A.**, Isa, I., & Abayomi, A. (2021). Urban flood vulnerability mapping using integral value ranked fuzzy AHP and GIS. *International Journal of Hydrology Science and Technology*, 12(1), 16-38.
- **Atijosan, A.**, Ewang, E., Rahmon, B. & Taofeek, A. (2021). Land Suitability Evaluation for Cassava Production Using Integral Value Ranked Fuzzy AHP and GIS Techniques. *International Journal of Hybrid Information Technology*, 14(1), 45-62. 10.21742/IJHIT.2021.14.1.03.
- Badru, R., Akinwale, O., Salau, A., Olorunyomi, K., Alwadood, J., & **Atijosan, A**. (2019). Assessment of Geo-Spatial Proximity and Magnetic Pollution from 132kV and 330kV Power

Transmission Lines to Infrastructures in Osogbo, Nigeria. *Eskişehir Teknik Üniversitesi Bilim ve Teknoloji Dergisi B-Teorik Bilimler,* 7(1), 81-93.

- **Atijosan A**, Salau A, Badru R and Alaga T (2017): Development of a Low-Cost Community Based Real Time Flood Monitoring and Early Warning System. *International Journal of Scientific Research in Science, Engineering and Technology*, Volume 3(3): 189-195. 473-483. ISSN:2394-4099.
- Jesuleye, I., Okeke, U., **Atijosan, A.**, Badru, R., Adewoyin, J., & Alaga, A. (2016). Morphometry assessment of Oba river basin and its implications for flood. *Journal of Geography, Environment and Earth Science International*, 8(3), 1-10.
- **Atijosan A**, Muibi K, Ogunyemi S, Adewoyin J, Badru R, Alaga A, and Shaba A (2015): Agricultural Land Suitability Assessment using Fuzzy Logic and Geographic Information System Techniques. *International Journal of Scientific Research and Technology*. 1(5): 113-118. ISSN: 2395-6011
- Eguaroje O, Alaga T, Ogbole J, Omolere S, Alwadood J, Kolawole I, Muibi K, Nnaemeka D, Popoola D, Samson S, Adewoyin, Jesuleye I, Badru R**, Atijosan A**, and Ajileye O. (2015): Flood Vulnerability Assessment of Ibadan City, Oyo State, Nigeria. *World Environment* 2015, 5(4): 149-159.

Edited and Refereed Conference Proceedings

- Babalogbon, B.A., Eguaroje, O.E., Ogbole, J., **Atijosan A.**., and Ojukwu, P. (2013): Geographic Information System (GIS) Based Multi-Criteria Land Suitability Assessment for Precision Agriculture, In: O.O. Awotoye, M.B. Adewole and O.J. Matthew (Ed.), Proceedings of the 6th Annual Conference of the Institute of Ecology and Environmental Studies, June 23rd -27th, 2013, O.A.U Campus Ile-Ife.
- Eguaroje, O., **Atijosan, A.,** & Mohammed, S. (2012, June). Geospatial and information communication technology convergence (Geo-ICT): Enabling sustainable environmental management in Nigeria. In 2012 8th International Conference on Information Science and Digital Content Technology (ICIDT2012) (Vol. 2, pp. 313-318). IEEE.

Google Scholar profile link: https://scholar.google.com/citations?user=mGRX9CYAAAAJ&hl=en

Capacity Building, Research Supervision, and Technical Training

- Federal University of Technology Akure (FUTA) / African Regional Centre for Space Science and Technology Education (ARCSSTE-E) – Joint Master's Program *(2015–2023)*

    - Resource Person for SAP 806: Antenna Design and Theory *(2015–Present)*
    - Supervised Three MSc Theses to completion

- African Regional Centre for Space Science and Technology Education (ARCSSTE-E), OAU Campus, Ile-Ife, Nigeria *(2009–2021)*

- Resource Person for various courses, including:

    - Transmission, Multiplexing, and Multiple Access *(SCM 705, 2019–2021)*
    - Applications and Trends in Satellite Communications *(SCM 707, 2018–2022)*
    - Introduction to Modeling and Simulation using MATLAB *(2009–2013)*
    - Digital Signal Processing *(SCM 702, 2016–2017)*

- Supervised Five PGD Theses to completion

References

Prof. Thomas Yesufu (Professor of Signal Processing and Intelligent Systems).
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