Emmanuel Narteh Aklie

PhD Student at Texas State University| San Marcos, TX | Email | LinkedIn| Portfolio

EDUCATION

2024 – Pres. PhD. Geographical Information Science
Texas State University (TSU), San Marcos, Texas: May 2024-Present

2022 – 2024 MSc. Geographical Information Science and Technology
Jacksonville State University (JSU), Jacksonville, Alabama: May 2024

2014 – 2018 B.A. Economics and Geography
University of Cape Coast, Cape Coast, Ghana: May 2018

TEACHING EXPERIENCE

2026 – Pres. ***Instructor of Records***, Department of Geo & Env. Stu., Texas State University
Courses Instructed: Fundamentals of GIS (GEO 2426)

2024 – 2026 ***Doctoral Instructional Assistant***, Department of Geo & Env. Stu., Texas State University
Courses Instructed: Advanced GIS Lab (GEO 3426), Physical Geology Lab (GEO 1410), Fundamentals of GIS Lab (GEO 2426- In-person/Online)

2022 – 2024 ***Instructional Assistant***, Department of Chemistry and Geosciences, Jacksonville State University, AL
Courses instructed: Physical Geography and Geology

RESEARCH EXPERIENCE

2026 **Lead Researcher** (Ongoing)
Article Title: Spatial Patterns of Environmental Exposure and Pulmonary Fibrosis Mortality in the United States: A County-Level Geospatial Analysis Using CDC WONDER Data.

2026 **Lead Researcher** (preliminary stages-posted on GitHub)
Project Title: Scaling Geospatial Resource Optimization for the Rural Hospital Officers Academy (RHOA); data-driven framework designed to model spatial healthcare accessibility and predict facility closure vulnerabilities across rural Texas.

2024 **Lead Investigator (Ongoing)**
Project Title: Geospatial Analysis of Life Expectancy: A census tract-level assessment of Socioeconomic and Environmental Determinants using a Forest-Based Regression model.

2024 **NASA Summer Project – Participant (Published), June- August**
Project Title:
Macdonald, F., Aklie, E. N., Tay, W. L., & Wolff, L. (2024). Iona Ecological Conservation: Utilizing Earth Observations to Understand Landscape Patterns and Assist in Wildlife Management in Iona National Park, Angola.

2023 – 2024 Thesis **Writing (Published)**
Aklie, E. N. (2024). *The Ghanaian War Against Malaria: A Geospatial Approach to Malaria and Healthcare Access in Ghana* (Order No. 31580344). Available from ProQuest One Academic. (3116542043).
https://libproxy.txstate.edu/login?url=https://www.proquest.com/dissertations-theses/ghanaian-war-against-malaria-geospatial-approach/docview/3116542043/se-2

2017-2022 **Capstone**

- Impact of Land use and Land cover change on Malaria vector species composition: A case study of Nzema East, Ekumfi, and Central Tongu Districts, Ghana.

- Methods to evaluate the quality of drone Mosaics Quantitatively: A case of Jamaica (Semester Project)

- How Residency Affects the Academic Performance of Students: A Case Study of The University of Cape Coast, submitted to the Department of Geography and Regional Planning, UCC, In Partial Fulfillment of The Requirement for the Fieldwork, Writing Skills, and Seminars Course in Geography.

- Group Capstone on the "Transport Institutions and their Roles in Poverty Alleviation". A Case Study of the Elmina District Assembly.

PROFESSIONAL EXPERIENCE

2024 – Pres **Graduate Assistant,** Dept. of Geography and Environmental Studies, TSU
Program Head: Dr. Giordano Alberto
Duties: Facilitated and graded Fundamental and advanced GIS lab assignments and reports; also, provided support to students with their lab work and research while effectively
Managed course-related tasks; mentored students through office hours and

one-on-one communication.; helped with troubleshooting within GIS tools. Guided students to explore ArcMap, ArcGIS Pro, and ArcGIS Online toolsets functionalities.

2022 – 2024 **Graduate Assistant,** Dept. of Chemistry and Geosciences, JSU
Program Head: Dr. Saeideh Gharehchahi,
Duties: Taught Labs in physical geography & geology; mentored students through office hours and one-on-one communication; documented attendance and completed assignments to maintain full class and student records; assisted new students in the world of Geographic Information Systems: training and mentoring.

2024 June **Research Intern,** NASA DEVELOP program, University of Georgia Node
Program Lead: Ms. Megan Rich
Duties: Facilitate biweekly discussions with partners to align project objectives and deliverables, ensuring clear communication and documentation to support African Parks conservation initiatives. Conduct comprehensive literature reviews on wildlife species and their habitats, leveraging Earth observation data to inform projectanalysis and insights. Generated 40-year time series analysis for Iona National Park utilizing Landsat 5,7,8, Sentinel 1,2, and Planet datasets.

2023 June **Logistic/ Operations Intern,** Envision WorldStrides
Program Lead: Mr. Will Hancock
Duties: Accompany students to group meetings and field excursions; Always enforce the code of Conduct; Account for students during group meetings, speaking events, site visits, excursions, and at room check (if applicable); Complete paperwork, distribute, and collect materials from students, and follow the program schedule; Set a positive and enthusiastic example for students for the duration of the program. Model appropriate behavior, language, and enthusiasm; implement all program curricula; facilitate engaging student-led discussions; generate intellectual curiosity; and meet all educational goals during each phase of the program.

2021 - 2022 **Assistant GIS Analyst,** Ghana Water Company Ltd, GIS Department
Supervisor: Mr. Kwaku
Duties: Utilized Trimble Nomad TDS GPS to collect utility data, ArcMap, and AutoCAD produces maps to meet client needs. Utilized Survey 123 to address and resolve technical and operational issues through client collaboration, ensuring specifications were met. Configured and deployed Hi-Target/Trimble GNSS

receivers, facilitating precise data collection and analysis from diverse spatial sources.

2018 - 2021 **Assistant Land Valuer, Lands Commission, Cape Coast, Central**, Ghana
Regional Head: Mr. Agana Charles
Duties: Fieldwork, Property mapping, Office Management, 3D, and AutoCAD Application; Community education on land registration; Comparing properties possessing similar features to determine competitive market prices. Liaised between property owners and prospective buyers to facilitate purchase and transfer of ownership; Advised clients on mortgage and housing conditions to identify successful properties and promote customer satisfaction. Stay updated on market trends for local areas and similar property types.

2016 - 2017 **Youth Mapper Assistant Facilitator (Volunteer**), University of Cape Coast, Dept Geography
Project Title: Data Collection and Database Management
Duties: Created and collected geospatial data using areal digitizing; Edited existing maps for international humanitarian organizations such as the World Bank and the United Nations for community resilient projects: flooding, malaria elimination. Utilized advanced software and tools, such as ArcGIS, QGIS, and Python, to perform spatial analysis andmodeling; Worked with clients to identify their needs and provided solutions through data visualization andanalysis; Collaborated with cross-functional teams to ensure data accuracy and completeness.

RELEVANT SKILLS

- Cartography and GIS Analysis (ArcGIS Pro, ArcMap, QGIS)
- Programming (Basics): Python, SQL, R Studio, Module Builder, SaTScan
- Microsoft Office Suite, Google Workspace, Database Management
- Proficient in ArcGIS Online (Business Analyst, Survey123, Quick Capture, Field Maps, Story Maps, Experience Builder)
- Remote Sensing: Google Earth Engine (Landsat 5,7,8,9, Sentinel-1, Sentinel-2 SAR, LiDAR (Drone2Map))
- Statistics & Referencing: Stata, SPSS, Excel, Zotero, Mendeley and My Bib.
- Research Methods: Literature Review, Abstract Writing, Metadata Decoding, and Experimental Design.
- Personal SkillsCommunication, Classroom Management, Assessment, Creativity, Technological Integration, and Collaboration.

PROFESSIONAL AND ACADEMIC AFFILIATIONS

2024 – Pres. Graduate Assistant: Dept. Geography and Environmental Sciences, TSU

2024 – Pres. Member: Southwest Division of the AAG (AGX/SWAAG)

2024 – Pres. Member: American Geophysical Union (AGU)

2024 – Pres. Member: Geographical Association (GEOSOC)

2024 – Pres. Esri's Young Professionals Network (YPN)

2022 – 2024 Graduate Assistant: Dept. Chemistry and Geoscience, JSU

2022 – Pres. Member: American Association of Geographers (AAG)

2022 – Pres. Member: Southeast Division of AAG (SEDAAG)

2016 – 2018 Member: Geographical Association (GEOSOC)

2016 – Pres. Member: UCC Youth Mappers

CONFERENCE PROCEEDINGS

American Association of Geographers (AAG) Conference, March 2025, Detroit, Michigan
Role: Poster presentation

Title: Geospatial Analysis of Life Expectancy: A census tract-level assessment of Socioeconomic and Environmental Determinants using a Forest-Based Regression model.

American Geophysical Union (AGU) Conference, Dec 8th- 13th, 2024, Washington, DC
Role: Paper presentation

Title: Utilizing Earth Observations to Understand Landscape Patterns and Assist in Wildlife Management in Iona National Park, Angola

ESRI User Conference, July 13th -19th 2024, San Diego, California (Global)
Position: Student Assistant
Role: Facilitate attendee registration processes and address logistical and informational inquiries Efficiently, engage in technical workshops to deepen knowledge of contemporary industry trends and GIS technologies. Foster professional interactions with GIS experts to enrich industry networks and practical understanding.

Southwest Division of the AAG Conference (SWAAG), Oct 6th-8th 2024, San Marcos, Texas

Role: Paper presentation

Title: Utilizing Earth Observations to Understand Landscape Patterns and Assist in Wildlife Management in Iona National Park, Angola

American Association of Geographers (AAG) Conference, March 2024, Honolulu, Hawaii
Role: Paper presentation

Title: The Ghanaian War Against Malaria: A Geospatial Approach to Malaria and Healthcare Access in Ghana

American Association of Geographers (AAG) Conference, March 2023, Denver, Colorado
Role: Poster presentation

Title: The Impact of Land use and Land cover change and Malaria prevalence in Ghana

Southeast Division of AAG (SEDAAG) Conference, November 2022, Atlanta, Georgia
Role: Poster presentation

Title: Impact of Land use and Land cover change on Malaria vector species composition: A case study of Nzema East, Ekumfi, and Central Tongu Districts, Ghana.

CERTIFICATES

- AI in GIS Education
- ArcGIS Pro Basics
- Python for Everyone
- Performing Unsupervised Pixel-Based Image Classification
- Spatial Data Science: The New Frontier in Analytics
- Going Places with Spatial Analysis
- Cartography
- Make An Impact with Modern Geo Apps
- The hour of Cyberinfrastructure: i) Intermediate Big Data ii) Intermediate cyberinfrastructure iii) Gateway Lessons
- ArcGIS Business Analyst Pro: i) Trade Areas ii) Target Marketing iii) Territorial Design iv) Analytics v) Data and Report

RECOGNITIONS & AWARDS

- Liberal Arts Graduate College Scholarship, Texas State University (Years 1, 2 & 3)
- TXST Graduate Merit Fellowship, (Year 1 & 2)
- Department of Geography Travel Grant (AAG conference, Detroit, MI, 2025)
- Student Government Rising S.T.A.R Travel Grant (AAG conference, Detroit, MI, 2025
- NASA DEVELOP program travel Grant (AGU conference, Washington, DC, 2024)
- Jacksonville State University Graduate Full tuition scholarship (MSc GIS, 2022)
- Department of Chemistry and Geosciences Travel Grant, Jacksonville State University
    - ✓ (SEDAAG conference, Atlanta, GA, Nov 2022)
    - ✓ (AAG conference, Denver, CO, March 2023)
    - ✓ (SEDAAG conference, Norfolk, VI, Nov 2023)
    - ✓ (AAG conference, Honolulu, Hawaii, March 2024)
- ESRI User conference Travel award (San Diego, July 2024)
- 2025 Spring ArcUser Magazine 'Faces of GIS' recognition
- Envision by Worldstrides Outstanding Leadership Award (July 2023)
- Envision (Rice Aerospace Academy STEM activities 5-star review)
- Spark School Complex Award of Honor, Students' Choice (2017/18)
- Spark School Complex Best Teacher of the year, parents' choice (2017/18)
- UCC Youth Mappers Award recognition (2016)
- Geographical Society (GEOSOC) Financial Secretary (2017/18 academic year)
- Geographical Society (GEOSOC) Public Relations Officer (2016/17 academic year)