Niarea D. Matthews

Raleigh, NC 27604 • (919) 539-1532 • Niaream8@icloud.com

EDUCATION

Elizabeth City State University - Elizabeth City, NC August 2023 - Present

Bachelor of Science in Computer Science; Bachelor of Science in Aviation Flight Education; GPA 3.8

- Awards/Honors: Chancellor's List
- Awards/Honors: TMCF 2024 Leadership Institute Scholar
- Awards/Honors: Organization of Black Aerospace Professionals (OBAP)

New York University Shanghai - Shanghai, China August 2021 - May 2023

Bachelor of Science in Computer Science; GPA 3.3

- Awards/Honors: NYU Academic Achievement Program (AAP) Rose of the Year
- Awards/Honors: NYU Shanghai Black Student Union (BSU) Vice President

RELEVANT COURSEWORK AND SKILLS

Python • JavaScript • Machine Learning • C++ • CSS • Data Visualization • Matplotlib • SQL • Computer Architecture • Data Structures • Net-centric Computing • OOP • HTML • UI/UX Design • Adobe Creative Suite • Drone programming • Excel

WORK EXPERIENCE

U.S. Department of Energy NSAM-ML Consortium - Elizabeth City, NC October 2025 – Present

Marine Waves Analysis with Video Segmentation ML Models

- Developing machine learning video segmentation models to analyze marine wave patterns for renewable ocean energy applications.
- Processing video data to detect and classify wave characteristics impacting energy harvesting potential.
- Applying computer vision techniques to improve accuracy of wave height and frequency estimation.

NASA - Elizabeth City, NC September 2025 – Present

SAR Image Processing with Deep Learning Models

- Implementing SFS-SD and Python deep learning methods to distinguish water bodies (homogeneous regions) from land (heterogeneous regions) in SAR imagery.
- Optimizing thresholds and standard deviation measures to improve segmentation accuracy in noisy satellite data.
- Implementing automated preprocessing and visualization code to normalize SAR satellite imagery.

Elizabeth City State University Tutorial Services - Elizabeth City, NC August 2024 – December 2024

Computer Science and Aviation Systems Tutor

- Tutoring computer science students in Python programming, computer architecture, and data structures, providing one-on-one assistance helping students develop problem-solving and critical thinking skills.
- Assisting students in understanding complex theoretical concepts and applying them to real-world programming problems.

PROJECT EXPERIENCE

Thesis Project - Elizabeth City, NC Fall 2025

Enhanced Thermal-RGB Fusion for Wind Turbine Damage Detection

- Combining thermal and RGB images of wind turbine blades using image registration and fusion techniques to highlight insulation leaks, water damage, and structural anomalies.
- Applying deep learning object detection models (YOLOv8) to evaluate improvements in accuracy, precision, and recall compared to single-image inputs.

Campus Safety Alert App - Elizabeth City, NC Fall 2025

UI/UX Development

- Designing and developing the front-end of a mobile safety app prototype that allows students to self-report incidents, receive instant alerts, access live broadcasting features, and enable precise GPS locating for emergency response.
- Assisting in backend development, including setting up the user database, writing SQL queries, and managing data in Snowflake.
- Building the user interface with React Native, focusing on usability and responsiveness.

Louis Stokes Alliance for Minority Participants (LSAMP) - Elizabeth City, NC Spring 2024

Drone Programming and Data Integration

- Programmed DJI drones for advanced applications across Elizabeth City State University.
- Utilized machine vision algorithms to process drone images and identify high-risk areas for flooding on campus and surrounding areas.

Place[01] E-commerce Website - Raleigh**,** NC Summer 2024

Front-End Development and CSS Integration

- Developed and enhanced an e-commerce website by implementing HTML, CSS, meta tags to increase user engagement and product sales. This optimization contributed to an 180% increase in user interaction.
- Integrated image animations to improve user engagement, leveraging CSS keyframes for dynamic visual effects.
- Implemented SEO with optimized meta tags, improving search engine visibility.