RICHMOND ADDAI

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Objective

Aspiring researcher with a strong background in agricultural science and data analysis, eager to leverage technical and research skills to contribute effectively to dynamic academic and professional environments. Passionate about applying advanced methodologies to solve data-driven agricultural and environmental challenges while enhancing expertise in a graduate program.

Education

University of Ghana ***[Sept. 2019 – Aug.2023]***
BSc. Agriculture (Soil Science)

Skills

Python • SQL • Machine Learning • Statistical Analysis • Data Visualization • Web Scraping
Problem Solving • Persistence • Communication • Poised under pressure • Teamwork • Adaptability

Undergraduate Research Project

Dissertation title: The Growth of *Azolla Caroliniana* in Arenic Natric Vertisol

Outcome: The study explores the impact of cow dung and inorganic phosphorus on the growth of *Azolla caroliniana*, an aquatic fern with nitrogen fixing capabilities. Results show that 12t/ha cow dung produced the highest biomass in the first harvest, while 8t/ha cow dung was most effective in the second. Moderate nutrient levels from cow dung are effective for sustainable Azolla cultivation, reducing the need for inorganic fertilizers.

Excerpt Link: https://bit.ly/3TgaDjP

Research Work Experience

Department of Soil Science – University of Ghana | (National Service) **Teaching & Research Assistant** ***[Nov. 2023 - Date]***

- Collaborating closely with faculty members on research projects, assisting in experiment design, data collection, and analysis.
- Organizing and setting up the chemistry practical class for over 300 first-year students
- Grading assignments and quizzes, providing constructive feedback to students.
- Holding regular office hours to offer additional support and clarification on course materials.
- Leading or assisting in smaller discussion or lab sessions to enhance student learning.

- Supporting laboratory work by setting up experiments for routine soil analysis. (CEC, pH, exchangeable Bases, Available P and N, Particle size, Organic Carbon)
- Assisting the Chief lab technician in operating the CNS analyzer for consultancy work.

Department of Soil Science – University of Ghana | **Intern Laboratory Assistant**
[Sept. 2022 – Nov.2022]

- Provided essential support to Dr. Dora Neina on the Sentinel Project, an interdisciplinary research initiative focused on achieving 'zero hunger' in sub-Saharan Africa while reducing inequalities and conserving ecosystems.

- Played a key role in executing experiments, ensuring the accurate setup of equipment, preparation of reagents, and adherence to experimental protocols for consultancy work.

- Skillfully handled samples, including labelling, storage, and proper disposal, adhering strictly to safety protocols

Practical Experience

Vacation Farm Practical Intern ***[July 2022]***
Livestock and Poultry Research Centre (LIPREC)

- Gained hands-on experience in animal production and science, working across various units, including poultry, ruminant, piggery etc.
- Worked in the dairy unit and learned the process of yogurt production.
- Acquired practical skills in operating farm equipment, including tractors, for livestock management and farm operations.

Personal Projects

Temperature and Corn Yield: Insights from Historical Data in the United States ***[July 2024]***

Description: Developed a data-driven analysis to explore the relationship between average temperature and corn yield in the United States. Utilized historical climate (Temperature) and agricultural (Corn yield) data to conduct a comprehensive correlation analysis.
Key Findings: Discovered that temperature alone is not a strong predictor of corn yield. The correlation coefficient of - 0.072905 suggests that temperature does not significantly influence corn yield in a linear fashion

Tools*:* Python, Pandas, NumPy, Matplotlib, Seaborn

GitHub Repository*:* https://github.com/richmond050/Corn-yield-Temperature-Analysis/tree/main

Forest Fire Prediction Using Weather and Spatial Data ***[September 2024]***

Description: Developed a machine learning model to predict the burned area of forest fires using spatial coordinates and weather features such as temperature, humidity, wind speed, and fire indices (FFMC, DMC, DC, ISI). Implemented feature preprocessing and model tuning to enhance performance.
Key Findings: Initial models (Linear Regression, Random Forest, Gradient Boosting) demonstrated limitations in predicting highly skewed fire area data. Logarithmic transformation was applied to address data imbalance, and hyperparameter tuning was used to improve model accuracy. Further improvements are being explored.

Tools: Python, Pandas, Scikit-learn, Matplotlib, Seaborn

GitHub Repository: https://github.com/richmond050/Forest-Fire-Prediction.git

Explore my full range of data science and machine learning projects on my portfolio page.

Website: https://richmondaddai46.wixsite.com/not-a-lab-yet/portfolio

Certifications

Python for Machine Learning ***[July 2024]***
Great Learning

SQL for Data Science ***[July 2024]***
Great Learning

Data Analytics with Excel ***[July 2024]***
Great Learning

Data Visualization in Tableau ***[July 2024]***
Great Learning

Data Science Foundations ***[January 2024]***
Great Learning

IZA – Institute of Labor Economics ***[November 2021]***
IZA/FCDO Development Economics Course for Sub-Saharan Africa

Extracurricular Activities

- Member of University of Ghana Tennis club. (Amateur Tennis Player)
- Experience Freelance Video Editor
- Head of the church media team

Referees

**Referees available upon request*