

AKOGO KENNEDY KWEKU

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RESEARCH INTERESTS

1. Assistive Technology for PWDs
2. Computer Vision
3. Machine Learning
4. Robotics in Agric

EDUCATION

University of Mines and Technology, Ghana

January 2021 - Sept. 2024.

Major: Bachelor of Science in Computer Science and Engineering

Undergraduate capstone project: Driver Drowsiness and Alcohol detection System with revenue Generation model to help curb road accidents.

Relevant courses: Simulation and Modelling, Software Engineering, Embedded System Design, Computer Architecture, Microprocessors and Microcontrollers, Data Structures and Algorithm, Operating Systems, Information Security, Report Writing, Digital Hardware Design

PROJECTS

Machine Learning:

- Used a Linear Regression model to accurately predict the salary of workers based on years of experience to help determine whether an employee deserves a pay raise.
- used multi-Linear regression to predict a company's profit based on its R&D spend, marketing, location, and administrative spending to assist startups in determining how to optimize expenditure on these sectors to maximize profit.
- used Polynomial regression to predict a company's profit based on its R&D spend, marketing, location, and administrative spending to assist startups in determining how to optimize expenditure on these sectors to maximize profit.
- used logistic regression to determine if a car purchase will be made based on the customer's age and salary range to assist companies in making target ads for specific age groups and salary ranges
- used K Nearest Neighbor to determine if a car purchase will be made based on the customer's age and salary range to assist companies in making target ads for specific age groups and salary ranges

Drowsiness and Alcohol Detection system with a revenue generation model:

July,2022

1. *Drowsiness Detection:*

- Implemented a real-time drowsiness detection system using computer vision or other relevant technology.
- Utilized facial landmarks or other features to assess driver's drowsiness levels.

2. *Alcohol Detection:*

- Integrated an MQ3 sensor into the system for alcohol detection in the vehicle.
- Developed algorithms to analyze sensor data and trigger alerts if alcohol is detected.
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3. *Fine Generation Model:*

- Designed a revenue generation model by linking detection results to a fine imposition system.
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4. *System Integration:*

- Integrated all components into a cohesive system for comprehensive safety and law enforcement.
- Ensured the system's reliability and accuracy in real-world scenarios.

Remote Controlled Fire Fighting robot

1. Automated Fire Detection and Alert:

- Integrated a fire detector into the robot for automatic fire detection.
- Programmed the system to generate an audible alert through the app upon fire detection.
- Remote Control App Development:

2. Remote Control App Development:

- Designed a user-friendly app using MIT App Inventor for remote control of the firefighting robot.
- Implemented controls for movement and water pump activation through the app interface.

3. Water Delivery System:

- Equipped the robot with a water-carrying unit and a pump mechanism for efficient firefighting.
- Ensured the system's capability to navigate through various terrains for targeted water delivery.

4. Real-time Monitoring and Control:

- Enabled real-time monitoring of the robot's location and firefighting activities through the app.
- Implemented responsive controls to provide immediate user intervention as needed.

Face recognition attendance system:

- Developed a sophisticated face recognition attendance system utilizing advanced computer vision techniques.
- Integrated Firebase backend for real-time student data management, ensuring efficient and secure information handling.
- Engineered a user-friendly interface, seamlessly integrating facial recognition algorithms and precise time logging for accurate attendance tracking.

Plant Disease Detection System:

- Conceptualized and developed an innovative web-based plant disease detection system empowering farmers to diagnose crop infections by capturing images.
- Implemented cutting-edge computer vision algorithms to analyze images accurately, enabling the system to identify and classify various types of crop diseases with high precision.
- Designed an intuitive and user-friendly web application interface, allowing farmers to seamlessly upload pictures for instant disease detection and receive detailed information about the identified crop ailment.
- Contributed to the advancement of precision agriculture by creating a scalable and accessible solution that aids farmers in making timely and informed decisions to protect their crops.

Built a Social Media Clone:

- Developed a full-fledged social media application using Django, showcasing proficiency in Python and the Django framework.
- Implemented key features such as user authentication, post creation, commenting, and liking functionalities to replicate a dynamic and interactive social platform.
- Designed and maintained a responsive and user-friendly interface, emphasizing a seamless user experience for effective communication and engagement.
- Demonstrated creativity and innovation by adding unique features or improvements to the standard social media model, showcasing a deep understanding of Django's capabilities.

WORK EXPERIENCE

Student Networking Intern University of Mines and Technology

May, 2022 – June 2022

- Gained hands-on experience in network administration and maintenance.
- Assisted in troubleshooting and resolving network issues, contributing to improved network reliability.
- Collaborated with the IT team on network infrastructure projects, enhancing system efficiency

- Demonstrated dedication and eagerness to learn in a dynamic university environment
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Student Intern Ghana Tech Lab, Makers Space

June - July 2022.

- Organized Machine Learning Tutorial for Ladies in STEM
- Acquired knowledge in 3D modeling and created 3D models.

AI and Backend Engineer for Rydgo

April 2023.

Robotics Instructor – Aaenics Robotics Community

April 2022-

SKILLS AND INTEREST

- **Programming languages:** Python, Java, SQL, HTML, CSS, BOOSTRAP
- **Frameworks:** Django, ASP.NET Core
- **Skills:** Computer Vision, Machine Learning. Django Development, WordPress
- **Engineering Tools and Software:** Arduino, Raspberry Pi, Visual Studio, Latex, ENSP Network Simulator, Wireshark, Proteus, PyCharm,
- Proficient in Microsoft Office Suit (Word, PowerPoint, Excel)

HONORS AND AWARDS

- University of Mines and Technology Innovation Fair, 4th Position **July. 2022**
- Participated in the Tech in Ghana Conference at the Ghana Tech Lab **May. 2022**
- Participated in the Di Hack Innovation Competition **Dec, 2021**
- Participated in the Delta Critical Thinking Seminar **May, 2023**
- Participated in the Digital Gov Hack **Mar. ,2023**

CERTIFICATIONS

- Introduction to Cyber Security Tools and Cyber Attack, Cousera **Oct, 2022.**
- Certificate Of Participation –Delta Critical Thinking Seminar. **May. 2023.**
- Certificate of Participation – Digital Gov Hack Competition. **Mar, 2023.**
- Computer Science and Engineering President. **Aug, 2023.**

VOLUNTEERING EXPERIENCE

Agric -IOT

Nov., 2020 – Aug, 2021.

- Contributed to the Agri-IoT project by implementing Arduino concepts, promoting innovation in agricultural technology as a volunteer.

Inclusive Tech Group

July - August 2018.

- Served as a mentor for the 2022 DI-Hack competition at Inclusive Tech Group, providing
- guidance and support to participants in fostering innovation for accessibility.

Firm Health Ghana Foundation

- Created and manage the website for Firm Health Ghana Foundation

Aaenics UMaT

- Trained 100 pupils from the Tarkwa Municipality in robotics and coding, fostering STEM

Festive Kids Bootcamp 2023

- Trained 300 students between ages 7 and 19 in robotics and artificial intelligence in Cape Coast
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LEADERSHIP EXPERIENCE

President - Association of Computer Science and Engineering Students

Aug 2022 – Sept 2023.

- Created a Mentorship Program where Senior Members mentor and provide guidance and to newer or less experiences members
- Organized a series of skill-Building workshops, covering topics like, coding languages, Software Development, Cyber security, Information Systems etc
- Invited guest speakers from the tech industry to give talks and share their insights with members.
- Advocated for the need and interest of the Computer Science and Engineering students within the university addressing concerns related to curriculum, resources or facilities
- Managed the association's Finances responsibly, keeping accurate records and ensuring transparent budgeting and spending
- Reviewed and updated the associations constitution to reflect the organizations goals and structure

Vice President and Co-Founder - Tech Prodigies.

Sept. 2021 – Aug. 2022.

- Worked closely with my co-founder to develop a strategic plan for TECH Prodigies, outlining the mission, vision and Goals of the organizations.
- Oversaw and participated in the development and execution of the AI Dustbin garbage sorting system
- Engaged in research to identify tech solutions that could address specific challenges in our country Ghana
- Placed 5th in the University of Mines and Technology INNOVATIOB FAIR

Academic Board Member – PENSA -Umat

Sept. 2023 – Date.

In consultation with other board members developed and curated education materials

Organized tutorial Lessons for Members

Introduces the Teaching of coding languages, Web development and WordPress

AI- Head – Aaenics Robotics

- Developed and implemented strategic to help members integrate Artificial Intelligence with Robotics
- Led AI- Focuses Projects within the Community such as developing machine Learning models, Computer Vision Application
- Collaborated with AI experts outside the community to bring in specialize knowledge and foster partnership
- Helped Teach Machine Learning and Computer vision to Members

CO- CURRICULAR ACTIVIES

Mentor Aaenics Robotics Community

Trained and Mentored 3 students to participate in a Hackathon and Placed 3rd

Organized free coding classed for interested students

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REFERENCES
