EVANS HONU

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RESEARCH STATEMENT

I am a roboticist, specialized in robot hardware design and firmware writing to control all kinds of robots. I am interested in understanding robot intelligence and vision, excited to develop custom robot control hardware and techniques to power the next generation of dynamic and useful robots at your noble institution and look forward to grounding my research in collaboration and innovation at the intersection of robotics and adjacent fields.

EDUCATION

Kwame Nkrumah University of Science and Technology, BSc. Physics 09/18-11/21

- **Notable classes: Electricity&Magnetism, Electromagnetic Theory, Analog Electronics, Digital Electronics, Renewable Energies and Sources.**
- **Teaching Assistant for Electricity&Magnetism, Circuit Theory.**

Akatsi Senior High School 07/2014 - 06/2017

- **Won 1st place in a Regional Science and Math Quiz**
- **Won 2nd place at the National Science Quiz Contest.**

PRESENTATIONS

Astrophysics Club KNUST (Physics Department)

- **Presented on BLACK hole information paradox and the singularity.**

HARDWARE AND SOFTWARE PROJECTS

FAMA Robot Controller — Github: FAMA-controller — Kicad, C++/C

- **Designed an engine from scratch for an autonomous AI powered solar robot for seed planting and fertilizer application without any human intervention (link).**
- **Wrote a firmware for the robot engine using C++.**

OXYGEN Analyzer For Nitrogen Plant —website:Oxygen Analyzer — Kicad, C++/C

- **Developed an oxygen analyzer for Nitrogen Plant and Programmed it with C++/C**
- **The device measures oxygen concentration from 21- 900ppm as compared to the commercially available ones. (link)**

SOLENOID Gas Valve Control Board — Website:Solenoid Gas Valve — Kicad, C++/C

- **Designed a printed Circuit board for opening and close of a solenoid gas valve.**
- **Operate by translating electrical signal received from a microcontroller to open or close a valve which interns controls the flow of gas(link).**

STEM Robot board — website:STEM Robot — Kicad, C++, C, JavaScript

- **Developed a control board for a STEM product for kids.**
- **Capable of obstacle avoidance and Line following.**
- **Has 10 RGB leds for color detection.**
- **STEM website for Corebot link to visual (corebot-taupe.vercel.app), Note: web-app still under construction.**

INTRAVENOUS Infusion Pump board — website:Infusion Pump — Kicad, C++,C

- Designed an infusion pump circuit board capable of monitoring delivery of fluids
- The system is able to regulate the flow rate and account for occlusion in the tube.
- Has a buzzer system that alert nurses incase the system fails to regulate the flow rate

SEISMIC Vibration Detector — Kicad

- Developed a device for a geophysics lecturer that could monitor vibration from the earth.
- The device picks the vibration and sends it to a master device which stores the data on an SD card.

ONGOING PROJECT

- Currently designing an open Source complete flight control system board from scratch.
- Designing for fixed-wing aircraft and autonomous drones.
- Perform task such as payload delivery etc.

WORK EXPERIENCE

Lead Robotics Hardware Engineer @ 3Farmate Robotics (www.3farmate.com) 02/22 - Present

- Design custom microcontroller boards for agricultural Robots.

College of Engineering (Innovation Center Hardware design consultant) 10/21-08/22

- Design electronics circuits, create schematics, board layout and Simulations for Engineering student.
- Teach student how to design professional circuit board. (link)

Hardware design Intern (link) 08/2018

- Developed a customized home automation system control board.
- Won best hardware design as intern in erictronics.
- won best performing electronics student in a summer skill program.

TECHNICAL SKILLS

Languages	C++/C, Python
CAD Tools	Kicad, Altium designer, fusion 360, Ltspice, NI Multisim
Frameworks	ROS(Robot Operating System)
Developer Tools	Git, Docker