Tendai Chimuka

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EDUCATION

New Jersey Institute of Technology ***Expected Graduation: May 2026***

Newark College of Engineering

B.S. Electrical Engineering, Minor in Drones and Robotics (3.4 GPA)

Relevant Coursework: *Digital Design* | *Electronic Circuits* | *Circuits and Systems(I&II)* | *Analog and Digital Circuits* | *Microprocessors* | *Programming Language Concepts* | *C++* | *Calculus (I, II & III)* | *Differential Equations*

PROFESSIONAL EXPERIENCE

NJIT Residence Life Office, *Resident Assistant* ***January 2024 - Present***

- Actively contributed to the welfare and growth of more than 200 students in the residence halls.
- Served as a resource and referral agent for students and staff.
- Collaborated with a team of 13 other resident assistants to ensure the safety and security of the resident's hall, conducting inspections and promptly responding to emergencies.

NJIT Pre-College Programs, *Teaching Assistant* ***June 2023 - August 2024***

- Assisted classroom instructors in activities related to students' academic development and enrichment in mathematics, communications, computer science, and engineering.
- Aided teachers in assessing student progress toward achieving learning goals while building positive relationships with students as a strong role model and mentor.
- Supervised a group of 24 elementary, middle, or high school students while on campus and off campus

NJIT GS-LSAMP Summer Research Program, *Research Assistant* ***June 2023 - August 2023***

- Designed efficient collision-avoidance path-planning algorithms for a multi-drone mission.
- Developed and evaluated the three proposed algorithms (ORBIT, DETACH, and STEER) through extensive computer simulations.
- Produced pseudo code for the proposed algorithms and utilized the code to run simulations.
- Established a profit model to evaluate the cost-effectiveness of the proposed algorithms holistically.

SKILLS

Technical: 3D Printing | Python | Circuit Design | Creo Parametric (CAD) | MATLAB | Multisim | Electronic Instrumentation

Soft: Leadership & Mentorship | Active Listening | Teamwork and Management | Organization | Time Management

PROJECTS

Fire Truck System

- Designed and built a remote-controlled fire truck with functional water spraying capability, integrating a relay system for pump and electronic control. Used Creo to design and 3D print custom components for the truck.
- Designed and implemented a guided fire extinguishing system using servo motors for oscillation and an infrared flame sensor for flame detection. Developed all control logic in C++ to ensure efficient and reliable operation.

Laser Tag System with 3D-Printed Blasters

- Collaborated with a team to design and implement a laser tag game using four BBC micro:bits and two custom 3D-printed blasters. Each blaster featured two micro:bits: one acted as the "shooter," sending signals, while the other served as the "receiver," receiving the signals and indicating a hit.
- Utilized the radio communication feature to send "laser" signals between micro:bits, triggering the receiver to flash red when hit, signaling a "tag" or "out" and enhancing the interactivity of the game.

Smart Home System

- Assembled and integrated various sensors, including the DHT11, MQ-2 gas, PIR motion, steam, and RGB sensors, into a smart home system controlled by a micro:bit, enabling real-time monitoring of temperature, humidity, gas levels, and motion.
- Designed a system with an LCD display for real-time data visualization and smart device connectivity, enabling remote monitoring and control of home systems such as door opening/closing and sensor readings

Involvement

Institution of Electrical and Electronics Engineers (IEEE), NJIT Robotics Club, National Society of Black Engineers (NSBE)