Bongiwe Sandi Nandi Mkwananzi

bongiwesan.mkwananzi@students.cookman.edu | linkedin.com/bongiwe | (470) 9089642

EDUCATION

Bethune-Cookman University **Daytona Beach, Florida**
B.S Computer Science | International Studies May 2026
Presidential Scholar
4.0 GPA

SKILLS

Programming Languages: Python, Java, JavaScript, CSS, HTML
Software: Tableau, MATLAB, Roadrunner, Figma
Relevant Coursework: Fundamentals of Scientific Computing, Calculus I & II, Computer Programming I & II(Java), Linear Algebra

PROFESSIONAL EXPERIENCE

Fermilab Batavia, Illinois
US CMS PURSUE Research Intern June 2023- August 2023

- Conducted a 10-week comparative analysis of profiling results between Run 3 and High Luminosity Large Hadron Collider (HL LHC) Simulations & Reconstructions
- Executed scripts on Linux, successfully gathering experimental data from CERN (European Organization for Nuclear Research), which directly contributed to the accuracy of my analyses.
- Analyzed CPU time usage for each new release of Compact Muon Solenoid (CMS) software using Igprof and Vtune Profilers.
- Discovered a 43% increase in CPU time consumption due to the HL LHC having 29% more tracks compared to Run 3.

Emzini WeCode Remote
Programming Assistant May 2023-Present

- Teaching Assistant for Emzini we Code, a coding program for 100+ students in Africa.
- Facilitate individual tutorial sessions and group tutorials of 5-10 students at a time, ensuring a 100% satisfaction rate through post-session surveys; utilizing interactive teaching methods to foster engagement and comprehension, resulting in improved academic performance.
- Collaborating with 19 other Teaching assistants to deliver lectures and tutorials based on the Python curriculum of the course.
- Hold weekly office hours for 3+ hours, assisting students in debugging programs and offering mentorship.

EcoCAR EV Challenge **September 2023-December 2023**
Connected and Automated Vehicle Intern, *Bethune-Cookman University/ Embry-Riddle Aeronautical University*

- Designed and implemented road scenarios using Roadrunner, MATLAB and Driving Scenario Designer app.
- Tested and optimized the driving phase of simulations, enhancing overall functionality and realism.

PROJECTS

Robotics Club *Hardware Lead*

- Orchestrated the hardware phase that included drawing track lines and painting a wooden board for the IEEE SoutheastCON 2023 Competition.
- Implemented a comprehensive hardware strategy that optimized performance and reliability, leading to a 40% reduction in system failures during the competition.

OTHER SKILLS & INTERESTS

Languages: English, IsiNdebele, Shona, Zulu, French
Affiliations: ColorStack, Rewriting The Code, New Seasons Youth Program Participant, Narachi Fellow