Emmanuel Zephyrin Ephrem Butsana
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EDUCATION

Michigan State University - E. Lansing, MI
Bachelor of Science, Electrical & Computer Engineering, GPA: 4.0 December 2025

EXPERIENCE

KPIT Technologies - Novi, MI
Engineering Intern, Middleware Practice June - August 2024

- Developed an internal formatting tool using Python to help with the implementation of customer-style guidelines for generated C scripts.
- Automated the generation of Lauterbach PRACTICE scripts using Excel and Python, lowering the prerequisite technical barrier and significantly improving testing efficiency.
- Prepared project documentation and presentations to keep key stakeholders apprised of progress, and obtain their feedback.

Physical Ultrasonics, Microscopy and Acoustics (PUMA) Lab - E. Lansing, MI
Undergraduate Research Assistant September 2022 - May 2024

- Implemented data augmentation techniques to enhance the diversity of datasets containing time-series signals using MATLAB
- Employed data preprocessing methods to clean raw data from ultrasonic testing and prepare it for machine learning applications using Python
- Utilized nondestructive evaluation for material characterization, gathering data on the speed of sound in three materials using ultrasonic testing, then computing elastic moduli

PROJECTS

PetQs: Animal Sentiment Analysis - E. Lansing, MI September 2023 - May 2024

- Worked as part of team 4 to develop an AI-powered web app to help determine animal sentiment from user-uploaded video input.
- Developed backend using Flask, providing a route for users to post media, linking inputs to the model.

Fan-Based Cooling System with LED Indicators - E. Lansing, MI November 2023

- Designed and implemented a fan-based cooling system using a thermistor and cascaded op-amp comparators, documenting the schematic diagram using KiCAD.
- Evaluated circuit performance using LTspice and bench equipment, measuring key performance metrics such as current draw and robustness to noisy input.

INVOLVEMENT

Member, MSU Artificial Intelligence Club September 2023 - Present
Member, MSU Strength Augmenting Robotic eXoskeleton (STARX) September 2023 - Present

TECHNICAL SKILLS

Proficient: Python, MATLAB, LTspice, KiCAD, Microsoft Office Suite, Google Suite
Intermediate: Verilog, Vivado Suite, C++, C