

# TADIWANASHE NIGEL NYAMAPFENE

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## EDUCATION

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### Rust College

*Bachelor of Science in Computer Science: 4.0GPA*

**Holly Springs, MS**

*Expected December 2026*

**Awards:** EA Smith Honors Scholarship, Presidential Medallion Award, Data for Black Lives Travel Scholarship (2024)

**Relevant Coursework:** Machine Learning and Data Science, Programming with Python, C++ Programming, Data Structures and Algorithms, Discrete Mathematics, Calculus I & II, Linear Algebra

## SKILLS

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**Languages:** Python, JavaScript, C++, Java | Node, Django, Next.js, React, Angular.js, HTML5, CSS

**Technologies:** TensorFlow, CNN, scikit-learn, AI, NLP | Git/GitHub | Pandas, Matplotlib, NumPy | Firebase, MySQL

## EXPERIENCE

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### Tufts University

*Machine Learning Research Assistant*

**Medford, MA**

*June 2024-August 2024*

- Developed an image classification model using TensorFlow and CNN to distinguish between aircraft variants and achieved an **accuracy of 80.14%** on a dataset of **10,000** images of aircraft using Google Colab and GPU Clusters.
- Optimized and fine-tuned the model by including additional layers to enhance data preprocessing and feature extraction.
- Performed comparative analysis between Traditional Machine Learning and Optimal Transport, demonstrating that Traditional Machine Learning achieved greater accuracy and less time for model training and testing for this task.
- Gained data analysis and visualization skills by plotting training and validation loss during training and testing, effectively measuring and evaluating the model's performance using tools which include Seaborn, Matplotlib, and NumPy.

### Headstarter AI

*Software Engineering Intern*

**Remote**

*September 2024-October 2024*

- Built and deployed 4 AI-powered applications in 7 weeks using React.js, Next.js, Firebase, Clerk, and Vercel with weekly sprints and incorporated CI/CD practices for iterative deployment and Software Development Life Cycle.
- Collaborated with 3 fellows to build an interactive customer support agent using Next.js. Implemented OpenAI to enable the agent to respond based on the company's knowledge base.
- Developed an educational flashcard application using React.js and implemented OpenAI to generate adaptive flashcards that adjust difficulty based on user performance, optimizing learning outcomes.

### Rust College

*Math and Computer Science Tutor*

**Holly Springs, MS**

*August 2023-April 2024*

- Conducted personalized tutoring sessions in Math and Physics, helping more than **25 students** improve their grades by an average of **20%**.
- Developed and implemented tailored study plans for students across **3 subjects**, resulting in average grade improvement on final examinations.

## PROJECTS

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### Smart Pantry

*Next.js, React, Material UI, Firebase, JavaScript, Vercel*

- Engineered a full-stack smart pantry application that enables users to seamlessly manage their groceries, allowing them to make real-time updates.
- Leveraged OpenAI API to implement a recipe suggestion feature based on available selected ingredients.

### RC Agritech – Black Enterprise Hackathon

*React, TypeScript, Flask, Firebase, OpenAI*

- Collaborated with a team of 4 to develop a web application for processing multispectral field drone images, enabling automated detection of infected crops and field portions.
- Integrated APIs to facilitate real-time processing of the images using a trained machine-learning model and OpenAI for further action recommendations.

### MyLibrary Chatbot

*Django, HTML/CSS, JavaScript, Python*

- Engineered a chatbot to facilitate real-time communication between students and library staff, improving accessibility to resources and saving time.