

MARY NANSIKOMBI

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EDUCATION

Oregon State University

B.S. in Computer Science(Honors) | Minor in Business

Anticipated graduation date August 2025

GPA 3.72

- **Relevant Coursework:** Data Structures, Computer Architecture and Assembly Language, Analysis of Algorithms, Introduction to Security, Operating Systems, Software Engineering Fundamentals

WORK EXPERIENCE

Agaid Institute(National AI Research Institute for Transforming Agricultural Workforce and Decision Support)

Pullman, WA

Machine Learning Intern

June 2024 - Aug. 2024

- Developed deep learning models using Faster R-CNN, PyTorch, TensorFlow, and NumPy, and RGB imagery achieving 86% recall in wheat yield estimation predictions.
- Utilized ML algorithms(SVM), optimizers and non maximum suppressors to reduce overlap between predicted wheat bounding box objects thus maximizing accuracy.
- Presented at the AgAID Symposium, teaching graduate students at Washington State University how to train and validate deep learning models, accelerating model development across labs.
- Developed a custom dataset class to streamline model training preparation and enhanced code reusability through object-oriented programming (OOP) principles.

University Housing and Dining Services(Oregon State University)

Corvallis, OR

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Community Assistant

Jun-2022 - June-2024

- Facilitated collaboration between technical and non-technical departments leading to improved collaboration and streamlined processes in apartment operations.
- Handled administrative tasks, including data entry for student apartment allocations, ensuring seamless move-in and move-out process for students with families
- Worked in a team of six, handling conflict management, lockouts, policy violations, and offering mental support, enhancing student safety and well-being.
- Created a supportive environment for students by answering their questions and organizing events that promoted diversity making international students feel welcome

CLASS PROJECTS

- Co-developed a health metric tracker microservice using **React**, **Node.js**, and **JavaScript** within an Agile framework, enabling monitoring of heart rate, blood sugar, and pressure to improve user health outcomes.
- Developing a front-end system for a resume application using **Python**, **JavaScript**, **HTML**, and **CSS** to help students streamline job applications.
- Gained experience in low-level systems programming by developing solutions for coding projects in C.
- Developed client-server technologies using **REST API**, **Node.js**, and **PHP** for web applications.
- Developed unit and integration tests in JavaScript using Jest to verify application features and component integration, ensuring accurate performance and functionality.
- Developed end-to-end tests with **Cypress** to ensure full application functionality, deployed using GitHub Pages with **CI/CD** integration.
- Developed a restaurant application simulator using object-oriented programming, applying encapsulation, polymorphism, and inheritance to streamline menu creation and secure sensitive sales information.
- Utilized memory management techniques through parallel processing leading to faster encryption and decryption within security implementation exercises

- Ensured proper development of system calls by implementing file management, communication, and information maintenance processes using signal processing techniques to enhance system reliability.
- Improved problem-solving efficiency by 20% through implementing data structures like **lists**, **stacks**, **queues**, and **dictionaries**, enhancing time and space complexity.
- Identified and resolved software bugs using VS Code debugger, valgrind and root cause analysis ensuring software projects were working as required without any malfunction
- Executed sub processes through shell scripting, signal processing, multi threading leading to creation of independent small shells through parallel processing to optimize memory utilization
- Utilized memory management techniques through parallel processing leading to faster encryption and decryption within security implementation exercises
- Developed a spin open close mechanism using semaphores to ensure multi-thread safety
- Ensured proper development of system calls through proper implementation of processes, file management, communication and information maintenance using signal processing
- Created a data pipeline using the faster-rcnn deep learning model to assist in automation tasks such as sorting through images
- Separated privilege level for kernel and application ensuring application did not have the privilege level to perform operations outside of its scope level.

LEADERSHIP

- Treasurer Adoptive Technology Engineering Network September 2023-September 2024
 - Public Relations Officer OSU App Club September 2022-September 2023
 - Association of computing machinery
- Technical Skills and languages:** Python,Java Script,React JS,Tensor,Agile flow,Numpy,Node.JS,HTML,CSS,C,C++,Git,Rest API,Agile,CICD,ReactJS,Linux,Windows