MARY NANSIKOMBI

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EDUCATION

Oregon State University **Int**Anticipated graduation date December 2025
Bachelors in Computer Science(Honors) *GPA 3.76*
Minor in Business

- **Relevant Coursework:**Web development,Data Structures, Computer Architecture and Assembly, Analysis of Algorithms,Introduction to Security,Operating Systems,Software Engineering Fundamentals,Introduction to artificial intelligence,Introduction to databases, Statics, Geometry,Writing in Business,Innovation and New product development, Innovation management, Launch academy,Senior capstone project,Mobile software development
- **Technical Skills and Programming languages:** Python, Java Script, React, Tensor, Agile flow, Numpy,Node.js, HTML, CSS, C, C++, Git, Rest API, Agile, CICD,Unix Linux,Windows, SQL,Docker,PHP, shell scripting,natural language processing, machine learning,Microsoft Office(Word, Outlook, Excel, Power point),Github, Plv8, Postgres, Notion,Figma

WORK EXPERIENCE

Agaid Institute(National Artificial Intelligence Research Institute for Transforming Agricultural Workforce and Decision Support)
Pullman, WA
Computer Science Intern (AI in Phenomics lab) June 2024 - Aug. 2024

- Developed, trained, and validated deep learning and machine learning models independently using **Python**, **TensorFlow, Pandas**, and **NumPy** achieving 86% accuracy in wheat object detection.
- Utilized **scikit-learn, Matplotlib, and Seaborn** for data visualization, streamlining testing by making performance metrics clearer and easier to interpret
- Led presentations through excellent communication and peer-taught graduate student teams on developing **deep learning models** and image processing data pipelines using pre-trained **Mask R-CNN and Faster R-CNN** for predictive tasks, significantly enhancing research outcomes across multiple labs.
- Built custom **object-oriented** classes for object detection tasks, enabling code reuse across diverse datasets and validation models in wheat head detection
- Utilized time series data to analyze patterns in wheat growth using phenotypic traits under various conditions, employing data modeling to assess the relationship between different factors and yield
- Developed process improvement strategies across labs in Washington, reducing workflow bottlenecks by **20%** and increasing operational efficiency.
- Delivered **data-backed** presentations to improve communication, fostering collaborative problem-solving in team settings.

CLASS AND PERSONAL PROJECTS

Web application design OR,USA
Oregon state University September 2023 - to date

- Programming and designing a web application using **JavaScript, Html, Css, React** ,and **Python** to streamline applications, boosting student job matching by 40%.
- Demonstrated expertise in front end development improving skills in **Java scrip**t and **CSS** leveraging tools like **Nodejs,**npm and implementing dynamically rendered content using handlebars.
- Developed proficiency in database management specifically in **MongoDB, Postgres SQL** for efficient data handling.
- Conducted code reviews and contributed to open-source software using **Git** and **GitHub**
- Developed and implemented a health microservice using client-server technologies, **Google fit API, Node.js**, PHP and **agile** development, resulting in enhanced communication between web applications and servers
- Designed and prototyped interactive user interfaces in **Figma**, creating responsive components and streamlining developer handoff.
- Utilized **Docker** with Test Kitchen and kitchen-dokken to automate testing of Chef cookbooks, validating infrastructure configurations in isolated, containerized environments.
- Developed AI-powered websites using **Retrieval-Augmented Generation** (RAG) and modular component design, leveraging Node.js, React, and JavaScript to enable non-technical business users to build and manage websites with ease.
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Relational Database with UI and Backend integration Restaurant project OR,USA
Oregon state University September 2024 - to date

- Utilized a combination of technologies including **Java Script ,CSS, HTML** and **SQL** to create user friendly and responsive UI and implemented backend functionality using **Python** to establish a smooth connection between UI and database
- Employed SQL to write Data Definition Language scripts for defining tables, relationships ,constraints and integrated triggers using **SQL** to automate specific actions based on predefined events enhancing data consistency and integrity
- Utilised **Python NLP, pretrained Bert mode**l and the Vader semantic analyzer to build a model semantic analyzer for product ratings leading to classification of products based on reviews

Enobase OR-USA
Senior Capstone Project Oregon State University September 2024 - to date

- Utilizing large language models **(LLMs)** and **SQL** to integrate database design with natural language processing, enabling the creation of tailored databases for business applications.
- Utilizing LLMs to interpret **natural language inputs**, generate synthetic data**,** through interaction with formula engines,**API's** for tasks like data processing, predictive modeling, and complex calculation

- Utilized PLV8 (PostgreSQL extension for JavaScript) to efficiently compute formulas and aggregate totals within complex datasets, streamlining data processing and enhancing performance for real-time analytics
- Containerized the PLV8 JavaScript engine for PostgreSQL using Docker, building and distributing cross-platform images to ensure consistent deployment across development environments.

LEADERSHIP & ACTIVITIES

- Treasurer Adoptive Technology Engineering Network • SWE
- InnovationX Participant College of Engineering • Public Relations Officer OSU App Club

HONORS & AWARDS

Hackathon Oregon State University Coding Competition

- Received recognition along with google merchandise for third best project in the Google Track showcasing use of the google Gemini AI Api, NodeJS, Javascript in application software development during coding competition at Oregon state university.

Finalist Innovation X College of Business Competitions *Jan 2024*

- Received an honor as a finalist in the InnovationX College of Business Entrepreneurship Competitions due to excellent innovation startup idea for improved transportation of the international students community