

SAVINDI WIJENAYAKA

Machine Learning Engineer & Researcher

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Summary

A Machine Learning Engineer and a Researcher with 2+ years of experience in applied machine learning research and production-grade cloud-native application development. Currently working towards a Ph.D. in Bioengineering to contribute to the advancement of healthcare with the aid of Artificial Intelligence (AI). Seeing someone's face light up with a smile due to a product I helped create brings me ultimate satisfaction as an AI and tech enthusiast.

Education

Ph.D. in Bioengineering

University of Auckland Dec 2021 - Present Auckland, New Zealand

- Analyzed gastric microstructures using an interdisciplinary approach integrating micro-CT imaging, mathematics, and deep learning, advancing the understanding of healthy stomachs.
- Engineered a semantic segmentation model to distinguish gastric tissue layers, integrating multiscale channel and spatial attention concepts, implementing numerous ablation studies, and saving over 40 hours per dataset.
- Developed a robust three-dimensional gastric tissue quantification framework using advanced mathematical techniques in Python; delivered precise measurements from 20+ tissue samples, establishing the first benchmark for future research.
- Developed a comprehensive computational model compiling crucial geometric information alongside quantification details sourced from 8 distinct experiments, enabling future in-silico experiments.
- Conducted biological experiments to collect and prepare rodent stomachs for micro CT imaging, resulting in a streamlined process that enhanced sample quality and consistency across 15 experimental trials.

B.Sc. (Hons.) in Software Engineering

University of Kelaniya Feb 2016 - Mar 2020 Kelaniya, Sri Lanka

- Specialised in Data Science and Net-centric application development
- Attained a GPA of 3.96 out of 4.00, obtaining a First Class.

Experience

Machine Learning Engineer

WSO2 Sept 2020 - Nov 2021 Colombo, Sri Lanka

- WSO2 is one of the world's leading open-source integration vendors. Choreo is its latest product providing an AI-enhanced integrated platform as a service.
- Researched, engineered and deployed the initial phase of Choreo's AI-assisted testing feature, using Python, Keras, Flask, Kubernetes and Azure DevOps pipelines.
- Architected, developed and deployed Choreo's AI-based anomaly detector with two other engineers, using Azure solutions, Ballerina, and Python, while adhering to security best practices, scaling requirements, and optimised resource usage.
- Analysed Ballerina Language Server performance and identified the cause of a memory leak using JMeter and Eclipse Memory Analyser (MAT), which helped in the optimisation of resources in Choreo.
- Contributed to automating the performance testing of Choreo by creating a library and a pipeline for system metrics collection using Python, Kusto, Seaborn, and Azure DevOps pipelines.

Software Research Engineer (Intern)

Pearson Sept 2018 - Sept 2019 Colombo, Sri Lanka

- Pearson is a leading Education provider, offering curriculum materials, multimedia learning tools, and testing programs to help educate people worldwide.

- Collaborated with two other engineers to create the minimum viable product of AI-based Public Speaking Evaluator Service (APSES) while contributing to emotion detection and speech analysis features, using Python, Keras, OpenCV, Kaldi and Flask.
- Investigated on Question and Answering and built the minimal viable product of a Chatbot, which answers students' questions based on Pearson books and other documentation, using a modified version of the Bi-Directional Attention Flow (BiDAF) model, Python and Django.
- Researched and engineered the minimal viable product which automatically classifies flashcards created by the system or users under available topics, using the Universal Language Model Fine-Tuning (ULMFiT) model, Python and Django.

Certifications

- **AI for Medical Diagnosis**
DeepLearning.AI 📅 May 2021
- **Deep Learning Specialisation**
DeepLearning.AI 📅 Dec 2020
- **TensorFlow Developer Specialisation**
DeepLearning.AI 📅 July 2020

Skills

- **Knowledge Areas** — Deep learning (Vision & NLP)
- **Programming languages** — Python, Ballerina, Java SE, Bash
- **Frameworks and tools** — Flask, TensorFlow, Numpy, Pandas, Keras, Springboot, Git, Agile
- **DevOps** — Linux, Azure, Kubernetes, Docker, Kustomize, JMeter

Achievements

- Awarded as the 1st place team in SPARC FAIR codeathon 2022 organized jointly by SPARC Data and Resource Center and National Institutes of Health (NIH).
- Placements in Dean's List in all four academic years of B.Sc.
- Awarded black belt in Karate.
- Member (2016-2018) and women's team captain (2018) in the University of Kelaniya Karate team, winning national and inter-university medals with merits.
- Lead the Marketing and Communication function of AIESEC in University of Kelaniya as the vice president (2018) to increase the growth rate.
- Managed the financial and budgeting aspects as the organising committee finance lead in RealHack 2019 inter-university hackathon.
- Awarded as the 4th Place team in the DataStorm 2020 datathon organised by Octave (JKH Centre of Excellence for Big Data Analytics) and University of Moratuwa.
- Became the 1st Runner Up team in National Youth Software Competition 2017 organised by UNDP-Sri Lanka.
- Achieved the Gold medal for Chess in Four Nations Championship 2019 organized by Pearson.
- Represented secondary school at the national level for Karate, Carrom, Kabbadi and as an Army Cadet.
- Held various leadership positions in the secondary school as a junior prefect, senior prefect and Karate captain.

Volunteer and Webinar hosting

- Member of the teaching team for Code In Place 2021, an online Python course offered by Stanford University during the COVID-19 pandemic.
- Guest speaker of IEEE Hobnobbers 2021, sharing knowledge on the topic "A dive into deep learning."
- Guest speaker of Pie & AI Sri Lankan session, organised by DeepLearning.AI, on the topic "An Introduction to AI and Machine Learning - Sinhala."

Languages

English
Sinhala

