Minura Samaranayake

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Experience

South Dakota State University **Brookings, SD**

Graduate Research Assistant ***Aug 2023 – Present***

- Satellite Image Processing and Calibration/Validation
- Currently researching techniques for calculating real-time Spectral Band Adjustment Factors (SBAF) for calibrating Hyper-spectral satellite sensors using Landsat, Sentinel-2 and EO1 Hyperion data.

Sysco LABS Technologies (Sysco Corporation) **Colombo, SL**

Software Engineer ***Oct 2022 – Aug 2023***

- Engineered ranked item recommendation algorithms for Sysco customers, utilizing APIs and enhancing unit test coverage across the codebase. (SpringBoot-Java)
- Developed a core component for managing completed offers, including promo codes and customer credits, establishing Kafka topics for internal and enterprise communication channels using Apache Kafka
- Initiated the Savings Manager project, architecting a solution to aggregate and expose total reward consumption by customers across various savings mechanisms (offers, promotions) via an Enterprise REST API
- Developed a Kafka consumer to process and reactively handle configurations from multiple services, with persistence in a PostgreSQL database and rigorous payload validation
- Implemented a CI/CD pipeline using ArgoCD integrated with GitHub, automating the deployment and management of applications with a focus on continuous delivery and GitOps practices for the recommendation system.

Software Engineer Intern ***Apr 2022 – Sep 2022***

- Implemented a Computer Vision Based Safety Wear Detection System for Sysco warehouses
- Software and Machine Learning model development for Sysco LABS Enterprise Architecture Group projects
- Designed and developed a fuel quota system for the people in Sri Lanka. Developed the front-end of the web app using React and the back-end following a Micro-services architecture using Java SpringBoot

Enlear Pvt Ltd **Colombo SL**

Technical Article Writer - (Part-Time) ***March 2021 – Present***

- Writing technical articles for different tech blogs **https://minura-samaranayake.medium.com**

Projects

Traffic Sign Detection in Real Time | *Computer Vision*

- Developed a Traffic Sign Detection Model: Leveraged TensorFlow to build a deep learning model for detecting and classifying traffic signs in real-time, using VGGNet for Feature Extraction: Utilized VGGNet architecture to extract high-level features from input images, ensuring accurate detection of various traffic signs
- Applied SSD Net for Object Detection: Integrated Single Shot Multibox Detector (SSD) to efficiently detect and localize traffic signs in images with minimal computational overhead

Object Localization and Detection of Safety Wear in Warehouses

- Developed a safety gear detection system using TensorFlow and Single Shot Multibox Detector (SSD) architecture to identify personal protective equipment (PPE) such as helmets, vests, and safety goggles in real-time
- Achieved high detection accuracy by fine-tuning a pre-trained VGGNet model integrated with SSD, optimizing for precision and recall on custom-labeled datasets. Deployed the model using AWS S3 and Lambda with SageMaker

Survey Management System | *NodeJs, React, MongoDB, Express, SurveyJs*

- Developed a Saas where users can build, send, and manage surveys within organizations/grpoups with the use of MERN Stack and created a custom API using the SurveyJS public API

Learning Management System | *Python, Django, Selenium, Heroku*

- Implemented the LMS using Django as the backend framework and used PostgreSQL as the database of the website. Hosted on Heroku
- Used HTML/CSS and Javascript as the frontend technologies and tested with Selenium and Travis CI for bug fixes and followed an Agile model in the development process

Skills

Java, Matlab, Python, SpringBoot, HTML/CSS, React, NodeJs, Django, MySQL, MongoDB, PostgreSQL, CI/CD, Docker, Pytorch, Keras, Sci-kit learn

Education

South Dakota State University, Brookings, SD ***2023 Aug - 2025 May(Expected)***

MSc. in Electrical and Computer Engineering(Reading) CGPA: 3.6/4.00

Coursework: Intro to Machine Learning, Deep learning and Intelligent Systems, Machine Vision Pattern Recognition, Remote Sensing Engineering, Advanced Image Processing

University of Peradeniya, Sri Lanka **2018 Jan - 2022 Sep**

BSc. Honors in Computer Science CGPA: 3.7/4.00 (First Class Honors)

Coursework: Object Oriented Analysis and Design, Software Project Management, Data Structures and Algorithms, Server Side Web Programming, Design and Analysis of Algorithms, Operating Systems, Database Management