

# Minura Samaranayake

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## Experience

### South Dakota State University

Brookings, SD

#### Graduate Research Assistant

Aug 2023 – Present

- Researching techniques for calculating real-time Spectral Band Adjustment Factors (SBAF) for calibrating Hyper-spectral satellite sensors using Landsat, Sentinel-2 and EO1 Hyperion and Reduce SBAF uncertainty.
- Developing image processing algorithms in Python and MATLAB to improve data accuracy and validation.
- Hyperspectral Image data visualization using MATLAB

### Sysco LABS Technologies (Sysco Corporation)

Colombo, Sri Lanka

#### Software Engineer

Oct 2022 – Aug 2023

- Developed ranked item recommendation algorithms for Sysco Shop, handling 1M+ monthly transactions. Improved unit test coverage by 35%, enhancing code reliability and reducing bugs. (Spring Boot - Java)
- Developed a microservice for managing offers, promo codes, and customer credits at Sysco, using Spring Boot's Project Reactor and Apache Kafka to boost message throughput by 25%.
- Designed and implemented an algorithm to aggregate total reward consumption and implemented an enterprise REST API, reducing query response times by 20% and handling 1M+ monthly transactions.
- Developed a Kafka consumer to process configurations from multiple services, improving system efficiency by 20% through reactive handling and data persistence in PostgreSQL. Ensured rigorous payload validation, reducing system errors by 15%.
- Implemented a CI/CD pipeline using ArgoCD and GitHub Actions, automating deployment and reducing deployment time by 30%.

#### Software Engineer Intern

Apr 2022 – Sep 2022

- Developed a Safety Wear Detection System for Sysco warehouses using Python and AWS Services
- Optimized codebases in Dart, Vue and Angular, reducing memory leaks by 15% for each framework, improved code coverage by 50%, which were internal tools to conduct AMI assessments of each team in Sysco LABS.
- Designed and developed a Fuel Management System using React and Spring Boot with MongoDB.
- Engaged in Architectural Reviews and Code reviews for Sysco Enterprise Architecture Group, which mainly focused on Research and Development for Sysco.

### Enlear Pvt Ltd

Colombo, Sri Lanka

#### Technical Article Writer - (Part-Time)

March 2021 – Present

- Writing technical articles tech blogs. Blog Post: <https://www.writergate.com/@Minurasam>

## Projects

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

- Engineered a SaaS platform allowing over 100+ users to build, send, and manage surveys within organizations.
- Developed a custom API leveraging SurveyJS for advanced survey functionalities, reducing manual survey creation time by 40%.

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

- Designed and implemented an LMS platform serving 500+ students, using Django and PostgreSQL.
- Used HTML/CSS and Javascript as the frontend technologies and tested with Selenium and Travis CI for bug fixes. Deployed using Heroku, achieving 99.9% uptime.

### 3 DOF Automated Robotic Arm | C++, Android(Java)

- This is a 3 Degree Of Freedom (DOF) robotic arm that can be programmed to execute repetitive tasks using an Android Application. This uses Arduino Mega 2560 and NodeMCU ESP8266 microcontrollers. Android Application was developed using Java.

### Traffic Sign Detection in Real Time | Computer Vision, Python

- Built a real-time traffic sign detection system with 90% accuracy using VGGNet and SSD for object detection. Processed 60+ frames per second, enabling efficient image-based decision-making. Leveraged Python and TensorFlow for developing and optimizing the model, enhancing computational efficiency for real-time data processing.

### Object Localization and Detection of Safety Wear in Warehouses

- Designed a safety gear detection system in real time using TensorFlow and SSD architecture. Achieved 95% detection accuracy by fine-tuning a pre-trained VGGNet model integrated with SSD, optimizing precision and recall on custom-labelled datasets. The model was deployed using AWS S3, Lambda, and SageMaker for scalable and reliable performance.

## Skills

Java, JavaScript, HTML5, CSS, MySQL, C++, Python, Spring, SpringBoot, Matlab, React, NodeJs, Django, MongoDB, Kafka, PostgreSQL, Linux, CI/CD, Docker, Git Version Control, DynamoDB, Datadog, AWS, Pytorch, Keras, TensorFlow, jQuery, Bash Shell Scripting, Bootstrap, Kubernetes, Ubuntu

## Education

### South Dakota State University, Brookings, SD

Expected 2025 May

#### MSc. in Electrical and Computer Engineering (Reading)

CGPA: 3.6/4.00

- Coursework: Intro to Machine Learning, Deep Learning and Intelligent Systems(Python), Machine Vision Pattern Recognition(Python), Remote Sensing Engineering, Advanced Image Processing
- Extra Curricular: Web Master IEEE Region 4, Player in the Rugby Team 2024

### University of Peradeniya, Sri Lanka

2018 Jan - 2022 Sep

#### BSc. Honours in Computer Science

CGPA: 3.7/4.00 (First Class)

- Coursework: Object Oriented Analysis and Design(Java), Software Project Management, Data Structures and Algorithms, Server Side Web Programming(Spring Boot), Design and Analysis of Algorithms(C++), Operating Systems, Database Systems
- Achievements: Prize for Excellence in Computer Science (2022), Deans List (2021/22)
- Extra Curricular: Rugby Captain 2021, Ceylon Drama Society Member, University Musical Society Member