

# NIRU FERNANDO

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*I am a final-year Computer Engineering undergraduate specializing in Data Management, with a strong interest in software engineering, full-stack development, machine learning, computer vision, and large language models (LLMs). My academic background has equipped me with a solid foundation in computer science, artificial intelligence, mathematical modeling, and algorithmic optimization. I am naturally curious and thrive on solving real-world problems by applying innovative technologies to develop efficient and impactful solutions.*

## EDUCATION

**Faculty of Engineering, University of Sri Jayewardenepura, Sri Lanka.**

2021 - Present

B.Sc. Engineering (Hons.) in Computer Engineering

Minor Specialization in Data Management.

GPA - 3.31/4.0

**Maliyadeva College, Kurunegala, Sri Lanka.**

G.C.E Advanced Level - Physical Science (2019): 1A, 2Bs

2019

G.C.E Ordinary Level (2015): 9As

2015

## INDUSTRY EXPERIENCE

**Software Engineering Intern at Azbow pvt Ltd**

May. 2024 - Nov. 2024

*Tech stack - Vue.js, Google-Charts, MySQL, Laravel, PHP, Postman, Github, Gitlab*

- Developed a responsive KPI dashboard for a German project, focusing on intuitive data visualization and user experience.
- Built and maintained the back-end infrastructure, including RESTful API integration, database schema design, and data validation to ensure accurate and efficient performance.
- Automated daily data updates through scheduled cron jobs to maintain real-time accuracy.
- Collaborated closely with clients and team members in regular meetings to align on requirements, provide updates, and incorporate feedback.

## PROJECTS

**OccluWatch – Application for Occlusion handling and traffic violation identification.**

Dec. 2024 – Present

*Tech stack - Python, OpenCV, YOLO, DeepSORT, TensorFlow, PyTorch, PyTesseract, EasyOCR, Flask, Vue.js, MySQL, Twilio, SendGrid*

- Developed an AI-powered traffic monitoring system capable of multi-CCTV vehicle tracking and detecting violations such as red light jumps, illegal lane changes, overtaking, and restricted U-turns.
- Integrated automated license plate recognition and real-time notifications to violators via SMS and email.
- Delivered a user-facing platform for reviewing traffic violations and managing driver profiles.
- Managed and annotated diverse datasets to ensure robust model training and evaluation under varying environmental conditions.

**Predict Lend – A Banking application for loan approval and performance monitoring.**

Jan. 2024 – Mar.2025

*Tech stack - Vue.js, Google-Charts, MySQL, Laravel, PHP, Postman, TensorFlow, Keras, ML Algorithms*

- A web application for calculating risks of loan approval process. Includes loan application submission, risk analysis, and credit score calculations.
- Machine Learning techniques are used for loan eligibility predictions & recommendations.
- Dashboard is implemented with filters for evaluating agents and customer segmentation, which includes filters and various types of charts for data visualization.

**Individual Research – GAN-Based Perceptual Image Compression.**

Nov.2024 – March.2022

*Tech stack - Tensorflow, python, GANs, VGG19, MobileNetV2*

- Developed a low-bitrate image compression system using GANs with saliency-aware bit allocation.
- Achieved high perceptual quality using a PatchGAN-based architecture and MobileNetV2 for saliency mapping.
- Optimized performance through a custom loss function combining adversarial, perceptual, and rate-distortion components.
- Outperformed traditional methods (e.g., JPEG) in MS-SSIM and LPIPS metrics, enabling real-time, resource-efficient deployment.

**3-bits - Advanced Maze Generation and Path Solver Book Store Management**

Nov.2024 – March.2025

*Tech stack - Python, OpenCV, NumPy, Tkinter*

- An advanced maze generation and solving application implementing multiple pathfinding algorithms (BFS, DFS, A\*, Dijkstra's) with real-time visualization. System integrates computer vision techniques including Canny edge detection, adaptive thresholding, and Hough transform to extract maze structures from images.

**Space Sync - Augmented Reality Application for furniture stores.**

Jul. 2023 - Nov. 2023

*Tech stack - Unity, c#, Google Cloud*

- An Augmented Reality (AR) furniture mobile application that utilizes AR technology to enhance the furniture shopping experience developed using Unity and C#.
- Implemented floor detection, depth analysis, rotations and object placements.
- The admin can upload and update the app with new furniture 3D models to cloud storage.

**inPath - Learning Management System.**

Jan. 2023 - May 2023

*Tech stack - HTML, CSS, JS, LogisticRegression, NodeJS, MongoDB Atlas Cluster*

- Web application for students and lecturers to manage student exams efficiently.
- Integrated a system to randomize the exam hall desks numbers.
- Implemented QR code technology for updating attendance seamlessly within the application.
- Machine Learning is utilized to analyze past student's results and recommendations are done for choosing the suitable field of study.

**TECHNICAL SKILLS**

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- Programming Languages - C++ | C# | SQL | PHP | JavaScript | Python
- Databases – MongoDB | MySQL
- Libraries and Frameworks - Pandas | NumPy | Scikit-learn | Matplotlib | OpenCV | Tensorflow | Keras | LLaMA | Vue.js | Laravel
- Tools & Services: Git | Github | Gitlab | PyCharm | VS Code | Postman | Visual Studio | Jupyter | Google Colab | Cisco Packet Tracer | Weka | Unity | IntelliJ IDEA | Jupyter Notebook
- Technical Fields: Software/Full-Stack Development | Machine Learning | Computer Vision | Data Management | Deep Learning | Natural Language Processing | Neural Networks | LLM
- Familiar Operating Systems –Windows | Ubuntu

**LEADERSHIP EXPERIENCES**

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|--|-----------------------|
| • Junior Treasurer Computer Engineering Society (Censco) | 2023 - 2024           |
| • Social Media Team Leader -ENIGMA Exhibition            | Jan.2024 - March.2024 |
| • Public & Relations Team - Project Thaprobane           | 2024 - Present        |
| • Director - Interact Club Maliyadeva College            | 2017 - 2018           |

**ACHIEVEMENTS**

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- 2016 Best Offensive player, football under 15- Colors Night
- 2013 Debating competition 2nd round winners
- 2013 All island fourth place - Football
- 2011 - 2017 Football provincial Champions
- 2009 - 2011 School chess team

**CERTIFICATIONS**

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- Machine Learning Specialization - DeepLearning.AI & Stanford University
- Programming in Python (open.uom.lk)
- Introduction to Machine Learning (Kaggle) Tensorflow for deep learning bootcamp - Andrei Neagoie, Daniel (Following)
- LLM Engineering: Master AI, Large Language Models & Agents - Ligency Team , Ed Donner (Following)

**REFERENCES**

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Dr. Udaya Wijanayake  
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