

Piraveen Sivakumar

☎ +94 769 618 638 | @piraveen.18@cse.mrt.ac.lk | 🔗 LinkedIn | 📄 GitHub | 📍 Jaffna, Sri Lanka

SUMMARY

As a data science and machine learning enthusiast, I am passionate about using these tools to solve real-world problems and create innovative applications. My work on various projects, including the Driverless AI project, the Alternative Credit Scoring App, the Transaction Abusive Word Detection App, the ATM Cash Optimization App, and the AI Virtual Art Gallery App, has allowed me to develop a strong understanding of these topics and apply my skills to a range of challenges. I have been responsible for tasks such as developing and implementing machine learning models, creating new features, and designing user-friendly platforms, deployed on cloud platforms and have achieved positive results in my work. These experiences have further solidified my interest in using data and machine learning techniques to make a positive impact in the world.

EDUCATION

University of Moratuwa

B.Sc. in Computer Science and Engineering; GPA: 3.75/4.20(First Class)

Moratuwa, Sri Lanka

Nov 2018 – June 2023 (Expected)

Jaffna Hindu College

GCE Advanced Level Z - Score: 2.2795

District Rank : 10 (out of 12k candidates), National Rank : 110 (out of 218k candidates)

Jaffna, Sri Lanka

Grad: Aug 2017

RESEARCH EXPERIENCE

University of Moratuwa

Undergraduate Thesis – Advisor: Dr.Thanuja Ambegoda

Moratuwa, Sri Lanka

Oct 2022 – Present

- **Generalizing Neural fields using Meta learning:** This research aims to develop a generalized neural field approach that can generate 3D objects from a limited number of images or from a single image using meta learning approach. This would allow for the creation of 3D objects from a minimal amount of data. [View proposal](#)

AAIVU, open-source Organization

Undergraduate Research Assistant – Advisor: Dr.Uthayashankar Thayasivam

Moratuwa, Sri Lanka

May 2021 – Nov 2021

- **Tamil Word Embedding and Projector:** This research project focused on Tamil word embedding and projector. Data was scraped from the Tamil book Venmurasu and word embedding methods such as word2vec, GloVe, and FastText were used. A projector was created to project the embedding in 3D and 2D. The research provided a better understanding of how Tamil words can be embedded and visualized using D3.js.

OPEN SOURCE CONTRIBUTION

CO3Dv2: Common Objects In 3D (version 2) – (facebookresearch) | [GitHub](#)

- Found a bug when I load the specific class dataset using the CO3Dv2 wrapper class
- Created an issue on GitHub | [Issue](#)
- Fixed the bug and created a pull request | [PR](#)

WORK EXPERIENCE

H2O.AI (Part-time)

Machine Learning Engineer

Colombo, Sri Lanka

Aug 2022 – Present

- **ATM Cash Optimization App:** A forecasting model using Pulp can be developed to optimize the replenishment of cash at ATMs. This model can alert ATM operators when cash levels are running low and when a replenishment is needed. Additionally, it can provide graphical representations of ATM cash levels and other data, allowing ATM operators to better understand and analyze their operations.
- **AI Virtual Art Gallery App:** The objective of this project is to develop an AI virtual art gallery app that showcases AI generated art pieces using Stable Fusion for an NGO organization.
- **H2O Driverless AI:** have expertise in both the design and testing of the user interfaces on the platform, as well as the automation of testing processes to ensure the platform's functionality and performance. Started to work on backend of platform

- **Support ticket analysis:** experience in developing and implementing a machine learning model to analyze customer support tickets in Freshdesk using natural language processing techniques to find semantic similar questions, which improved the efficiency of the support team by reducing the need for manual review of tickets and allowing them to quickly find and respond to similar customer inquiries.

H2O.AI

Colombo, Sri Lanka

Machine Learning Engineering Intern

Dec 2021 – Aug 2022

- **H2O Driverless AI:** Have experience in developing for H2O Driverless AI, from front-end development to working on the backend. Highly knowledgeable in this field and confident in my abilities.
- **Alternative Credit Scoring App:** Developed this app using H2O Wave and Driverless AI models. This app provides an end to end platform to help users access credit scoring services. This model building process uses non traditional data such as Bank account data, Social media data, Utility and telecom payment data, and Rent payment history to determine the creditworthiness of customers.
- **Transaction Abusive Word Detection App:** An end to end platform was implemented using H2O wave framework and H2O driverless AI to identify any potential abusive words contents associated with the transaction. Created new features using graph analysis. This will tell abusive score and flag the transaction. The platform was designed to facilitate the efficient and effective monitoring of the transaction.

Niogin Technologies(Part-time)

Colombo, Sri Lanka

React Native Developer

Jan 2021 – Apr 2021

- Developed frontend for an App that send money online faster and more securely over the country. I created 15 pages of this App such as Multi Form page, Credit card page etc. It is like mobile version of *remitle.com* website.

Yarl IT HUB

Jaffna, Sri Lanka

Intern

May 2018 – Sep 2018

- Worked for an *AKI.coach* E-learning platform, where I was tasked with assisting in the hiring and management of school leavers. This included collecting Q and A threads, managing databases, and ensuring that all material was up-to-date and organized. I found the work challenging and rewarding, and it was great to see how technology was used to support learning. It was also an excellent opportunity to get to know some students and learn more about their educational needs.

SELECTED PROJECTS

Style Transfer App | [GitHub](#)

- Uses pre-trained VGG-16 model to apply artistic style transfer to images
- Uses Transfer Learning techniques
- Allows users to upload an image, select a style from a list of pre-defined styles, and then apply the style to the image.
- The app then displays the original image and the stylized image side-by-side.

Class Incremental Learning using Pytorch lightning | [GitHub](#)

- Construct a model that can acquire knowledge of new classes while preserving its ability to differentiate between existing classes.
- A strong fundamental baseline of class-incremental learning methods.
- Utilizing torch.distributed, timm, continuum, etc.
- The model is trained on ImageNet, CUB, CIFAR100.

Coordinate MLP | [GitHub](#)

- Developed Coordinate MLP (Multi-Layer Perceptron) is used to represent an image and recreate it by its coordinates.
- The model is trained on MNIST dataset.
- Different positional encoding and Fourier features are used to help the MLP learn the image and its features.

SELECTED UNDERGRADUATE PROJECTS

Mobile App that provides common platform for Customer and Portable vendors | [GitHub](#)

- It is like combination of uber and ubereats App.
- Customer can set an desired item, when item is available, it will send notification to customer.
- Vendor also can view location of requested customer for specific product.
- Hight UI experience
- Utilized React Native, Graphql, Redux, Firebase, Cloud Functions

Bank Transaction and Loan Processing System | [GitHub](#)

- Database designing with ER-Diagram, usecase diagram, event tables and class Diagram
- Developing Minimal UI
- Using MVC architecture
- Utilized php, mysql, phpmyadmin, javascript,html/CSS

Classification of anomaly in GastroIntestinal tract with deep Learning | [GitHub](#)

- With ImageNet on Kvasir dataset, created the best perfoming Convolutional Neural Network by modifying existing models.
- Utilized Tensorflow, Keras, Colab

Web based Information system for Library Management system | [GitHub](#)

- Object oriented programming
- MVC architecture
- Using design patterns
- Utilized php, mysql, phpmyadmin, javascript,html/CSS

SKILLS

Programming: Python, JavaScript, Java, TypeScript

Technologies: VScode, Git, PyCharm, Docker

Frameworks: Pytorch, Scikit-learn, Pandas, Numpy

General Computing: Linux, SLURM

Cloud Computing: AWS(EC2, S3), GCP

Databases: MySQL, MongoDB, Firebase

Experiment Tracking: WandB

RELEVANT COURSEWORK

MA2033 Linear Algebra: A+

MA2073 Calculus for System Modelling: A+

MA3013 Applied Statistics: A+

MA2063 Differential equations and Applications: A+

CS3612 Intelligent System: A+

CS3042 Database System: A+

CS3962 Research and report Writing: A

CS4522 Advance Algorithms: Ongoing

CS4622 Machine Learning: Ongoing

CS4722 Computer Vision: Ongoing

REFERENCES

Dr. Thanuja Ambegoda

Senior Lecturer

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

Dr. Uthayashankar Thayasivam

Senior Lecturer

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka