

Singhe Silva

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RESEARCH INTERESTS

Machine Learning, Natural Language Processing, Computer Vision, Data Mining

EDUCATION

University of Kelaniya, Sri Lanka (UOK)

(2019 - 2023)

BSc. Honours in Computer Science offered by the Faculty of Computing and Technology

- Cumulative GPA: 3.77/4.00 (1st class Honours)

- Related Core Modules: Foundation of Artificial Intelligence, Machine Learning and Pattern Recognition, Artificial Neural Networks, Deep Learning, Mathematics for Computer Science, Stochastic Processes, Theory of Automata, Probability Distributions and Applications, Programming and Program Design, Data Structures and Algorithms, Object-Oriented Programming, Theory of Programming Languages

St. Anthony's College Kandy, Sri Lanka (Senior High School)

(2003 - 2016)

G.C.E. Advanced Level Examination in Physical Science Stream (University Entrance Examination)

- Related Subjects: Combined Mathematics, Physics

RESEARCH EXPERIENCE

Predictive Analysis on Social Media Content to Become Viral (Final Year Research Project)

University of Kelaniya, Sri Lanka

Analyzed and forecasted the virality of Instagram image posts by identifying key drivers of high virality rates.

Combining sentiment analysis, image processing, and user history assessment, I devised a unique approach to predict the 'Virality Rate'. By employing advanced regression models and integrating Faster R-CNN model, OpenCV, Tensorflow and Pytorch for technical feature extraction using Python, a Mean Absolute Percentage Error of 0.151 and an R-squared (R²) value of 0.924 were achieved.

PUBLICATIONS

Singhe Silva, Dr. Rasika Rajapaksha 'Predictive Analysis on Social Media Content to Become Viral', 8th International Conference on Advances in Technology and Computing 2023, awarded the 'Best Paper'

PROFESSIONAL EXPERIENCE

Quality Engineer/ Developer, Sysco LABS Sri Lanka

(2024 April - Present)

- Developed Data Testing Framework, a Python-based solution supporting systematic data validation across both small-scale datasets and large-scale big data environments.
- Contributed to the development and enhancement of SUTAP, a standardized test automation SDK supporting scalable UI, API, and mobile testing workflows across teams.
- Explored AI-driven testing methodologies, including LLM evaluation using Promptfoo and synthetic data generation (SDV) for controlled, privacy-preserving test datasets.
- Implemented unit tests for core utility methods and integrated Apache Airflow to orchestrate and optimize data testing workflows.

Business Analyst Intern, Grubtech

(2024 Jan - 2024 Mar)

- Collaborated with stakeholders to gather, analyze, and prioritize product requirements, ensuring alignment with business objectives.
- Created detailed use cases and worked with development and QA teams to validate functionality and performance.
- Produced clear documentation to support seamless cross-functional communication.

Software Engineer Intern, WSO2

(2022 Oct - 2023 Mar)

- Implemented the Logs-to-Trace correlation feature in Chereo Observability, enabling users to link log entries to traces for better request-response flow understanding.
- Improved troubleshooting efficiency and system monitoring, enhancing the user experience.
- Integrated new features into existing systems to optimize development efficiency.
- Designed and developed a web application for local government officers, streamlining certificate issuance for government, job, and education documentation needs.

Data Analyst Intern, Nestlé Lanka

(2021 Jun - 2021 Aug)

- Utilized data-driven strategies to analyze and implement cost-saving measures, leading to a substantial reduction of annual electricity expenses by over 3400 USD for the manufacturing factory.

TEACHING EXPERIENCE

Visiting Lecturer, National Institute of Co-operative Development, Sri Lanka

Conducted lectures for the 'Object-Oriented Programming' module in the Certificate Course in Software Engineering

ICT and Mathematics Tutor for Edexcel Ordinary Level (IGCSE) at Keenbridge English Academic (Pvt.) Ltd.

PROJECTS

Data Testing Framework - A Python-based Test Automation Framework designed for versatile data testing requirements, from handling simple datasets to large-scale Big Data. It supports big data analysis and validations, enabling cross-team use at Sysco LABS for Big Data Testing.

- Technologies: Python, AWS, Apache Airflow, GitHub, SQL, Kubernetes

SUTAP (Sysco's Universal Test Automation Platform) - A custom-built test automation SDK that standardises UI, API, and mobile testing across teams at Sysco LABS, providing reusable automation methods and integrations for scalable and maintainable test execution and centralised result tracking.

- Technologies: Java, Amazon EC2, Apache Kafka, Selenium, Appium, Git

Logs to Trace Correlation in Observability View - Enhanced observability in microservices architecture by linking log entries to their corresponding traces, enabling a detailed understanding of request and response flows. This integration significantly improved system monitoring and troubleshooting capabilities.

- Technologies: Ballerina, React, Material UI, KQL, Postman, Git, GitHub

'Grama Check' Web Application - A web application enabling local government officers to issue certificates for government services, job applications, and educational purposes. The app verified individuals' Identity Card details and ensured they had no criminal history.

- Technologies: Choreo (a cloud-native integration platform), React, Vercel, MySQL, Asgardeo

TechNik - A machine learning-driven mobile application enabling users to engage in sports training at home, assessing their movements and techniques, with precise guidance and accuracy. TechNik offers key advantages over traditional coaching, including flexibility, cost-effectiveness, safety and time efficiency.

- Technologies: *Frontend*: Flutter (Dart), *Backend*: OpenCV, OpenPose for image processing and computer vision

Sentiment-Based Movie Recommendation System - A website that manages the user reviews and predicts movie ratings based on sentiment analysis.

- Technologies: *Web Technologies*: HTML, CSS, JavaScript and PHP, *Framework*: AngularJS, *IDE*: WebStorm, Eclipse, *Database*: MySQL, *Programming language*: Python (TextBlob library)

eZPark (ongoing) - A mobile application that helps users locate and compare parking spots, check availability, view parking history, save parked locations, and calculate charges. The app also allows parking owners to register spaces and features a rating system to guide users to the best spots.

TECHNICAL TALKS

Session at Sysco LABS, showcasing the Data Testing Framework, a Python-based solution designed to improve data quality and enhance cost efficiency in big data testing.

SKILLS

Languages: English (fluent), Sinhalese (fluent)

Programming Languages: Python, Java, Ballerina

Web Technologies: HTML, CSS, JavaScript (React)

Machine Learning Libraries/Tools: Scikit-learn, NLTK, OpenCV, Tensorflow, Pytorch, TextBlob

Database: NoSQL, MySQL, PostgreSQL

Version Controlling Services: GitHub

Operating Systems: Ubuntu, Windows, macOS

Cloud Computing Platforms: Amazon Web Services

Data Engineering Tools: Apache Airflow

AWARDS & ACHIEVEMENTS

- Winner of the Gold Medal awarded for **The Most Outstanding Student of the Faculty of Computing and Technology**

- Best Paper Award for the Research paper entitled 'Predictive Analysis on Social Media Content to Become Viral' at the 8th International Conference on Advances in Technology and Computing 2023

- Winner of the **Hall of Fame Quality Engineering Award** for developing the Data Testing Framework at the Blueprint 2024, Annual Awards Ceremony of Sysco LABS Sri Lanka

- Dean's List Recognition in 6 out of 8 semesters at the University of Kelaniya

- 1st Runner Up at Inquisitive Minds 2020, Ideathon organized by the LED Club of UOK and Unilever Sri Lanka

- Finalist of Ideathons, Thinkwave 3.0 organized by AIESEC in University of Moratuwa, Arimac FutureCast 2021 organized by Arimac and AIESEC, and HackAI 2021 organized by STEMUP Educational Foundation

- Best Organizing Committee (President) - EVOLUTION AI, Inter-University Ideathon by AIESEC in UOK

- Best Provincial Coordinator and University Representative of IEEE Innovation Nation Sri Lanka 2021

- Semi-finalist at Best Speaker 2021, All Island Public Speaking Contest organized by the Gavel Club of UOK

- Winner of Maheshan Shield, Best Performer at Mathematics of the Year 2012 at St. Anthony's College Kandy

EXTRA-CURRICULAR ACTIVITIES

- Program Team Lead of IEEE Innovation Nation Sri Lanka 2022 (2022 Apr - 2023 Jan)

- Editor of IEEE Computer Society of University of Kelaniya (2021 Jul - 2022 Sep)

- Assistant Secretary of University of Kelaniya ISACA Student Group (2021 Jun - 2022 Apr)

- Event Manager of CyberZee 2022, Inter-University Cyber Security Quiz Competition

- Vice President Membership of Gavel Club of University of Kelaniya (2021 Sep - 2022 Sep)

- Customer Experience Manager of Value Delivery Team of AIESEC in University of Kelaniya (2021 - 2022)

- Specialist in AIESEC International in Core Committee of International Presidents' Meeting 2021

REFERENCES

Prof. Dhammika Weerasinghe

Professor in Computer Science

PhD (Oakland, USA), MSc (Oakland, USA)

Dean, Faculty of Computing and Technology

University of Kelaniya, Sri Lanka

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Prof. S.R. Liyanage

Professor in Computer Science

PhD (NUS, Singapore)

Head, Department of Software Engineering,

University of Kelaniya, Sri Lanka

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