Sharuka **Thirimanne**

Graduate Student | Researcher | Former Software Engineer

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Summary

A graduate student who is currently pursuing an M.Sc. Computer Science at York University, Canada with research & development experience. +1-year industry experience as a software engineer. Proven history of successful work in software development, artificial intelligence (AI), and data science through academic/industry projects, and publications. I am currently seeking for an internship opportunity as a Software Developer, Data Scientist or Machine Learning (ML) engineer.

Education

Master of Science in Computer Science

York University │ Toronto, Canada

SEP. 2022 - APR. 2024

- **GPA** : 7.8/9.0
- **Subjects:** Machine Learning Theory, Mining Software Engineering Data, Neural Networks and Deep Learning, Data Mining
- Awarded **$62,500 scholarship** which covers full tuition with monthly stipend.

Bachelor of Science in Electronics & Telecommunications Engineering

SLTC Research University │ Colombo, Sri Lanka

OCT. 2016 - NOV. 2021

- **GPA** : 3.33/4.0 | **Class** : Second Class (Upper-Division) - Honours

Skills

Programming	**Python**, C++, Java, Dart
Machine Learning	Scikit-Learn, Pandas, Matplotlib, Numpy, Weka
Deep Learning	TensorFlow, PyTorch, Keras
AI Technologies	Computer Vision, Natural Language Processing
Backend	Django, Django REST Framework, Redis
Cloud Computing	Google Cloud Platform (GCP), Amazon Web Services (AWS)
Other	PostgreSQL, MySQL, Git, GitHub

Work Experience

York University

Teaching Assistant │ Toronto, Canada

SEP. 2022 - APR. 2024

- TA for Advanced Object-Oriented Programming (EECS 2030) and Software Engineering Requirements (EECS 4312).
- Grading assignments, mid & end examinations, and invigilation.

York University

Research Assistant │ Toronto, Canada

SEP. 2022 - APR. 2024

- Undertaking and assisting the supervisor with research at **EXINES** lab.
- Working on software documentation simplification using transformer-based LLMs based on user expertise.

Tryonics Pvt Ltd

Software Engineer │ Colombo, Sri Lanka

AUG. 2021 - AUG. 2022

- Created highly accurate duplicate image identifier that detects text images with over 90% accuracy.
- Won merit award at NBQSA National awards competing with leading Sri Lankan tech companies.
- Developed the backend and the APIs using Django and Django REST framework in Python.

Huawei Technologies

Trainee Engineer │ Colombo, Sri Lanka

SEP. 2019 - MAR. 2020

- Contributed to an island-wide fibre optics cable laying project (FTTx) in Sri Lanka.
- Inspected over 250 fibre cable and civil drawings, identifying faults and coordinating with regional managers for resolution, ensuring accurate outcomes.

Publications

One Documentation Does Not Fit All

39th IEEE International Conference on Software Maintenance and Evolution (ICSME), Colombia, 2023

Deep Neural Network based Real-tie Intrusion Detection System

Springer Nature SN Computer Science Journal, United Kingdom, 2022

Deep Neural Network based Real-tie Intrusion Detection System

7th International Conference on Cyber Security and Privacy in Communication Networks, United Kingdom, 2021

Comparative Algorithm Analysis for ML Based Intrusion Detection System

10th International Conference on Information & Automation for Sustainability (ICIAfS), Sri Lanka, 2021

Projects

Simplify TensorFlow Software Documentation Based On User Expertise

MAY 2023 - Present

- One documentation does not fit for all users. Therefore, researching on fine-tuning the BART and LLaMA pre-trained models for text simplification to enhance the comprehensibility of software documentation.

Expertise Impact on Stack Overflow (SO) Questions

OCT. 2022 - APR. 2023

- Utilized Stack Overflow data to create a sophisticated model for assessing user expertise in machine learning and software engineering. Employed unsupervised learning techniques to evaluate users' proficiency levels and determine their ability to comprehend TensorFlow tutorial documentation across varying expertise levels.

Near Duplicate Image Identifier

AUG. 2021 - JUL. 2022

- Developed a Python algorithm using image processing techniques and AKAZE descriptor detection to detect duplicate images (medical claims) for fraud detection. Implemented backend and APIs with Django and Django REST framework.

ML based Intrusion Detection System (IDS)

MAY 2020 - JUN. 2021

- Optimized ML algorithm selection for Intrusion Detection Systems (IDS), comparing DNN, SVM, K-NN, One-Class SVM, K-Means, and EM. Created a real-time IDS using a trained Deep Neural Network, ML pipeline, and packet sniffer.

Automated Car Parking Software using Java and MYSQL

JUN. 2018 - JUL. 2018

- Created a Java-based desktop application with MySQL integration for streamlined car park management. Features include visualizing slot availability, reservations, receipt generation, and timely notifications for exceeded time limits.

Dual Axis Solar Tracking System

FEB. 2018 - MAR. 2018

- Developed a solar tracking system to rotate horizontally and vertically to position the solar panel perpendicular to the sunlight using a PIC microcontroller coded in C together with LDRs and DC motors.

Certificates

GCP Fundamentals - Core Infrastructure	Machine Learning
Introduction to Data Science in Python	Neural Networks and DL
ML with TensorFlow on GCP Specialization	Convolutional Neural Networks
AWS Cloud Practitioner Essentials	Improving Deep Neural Networks

Honors & Awards

2012   **Gold Medal,** All island Wushu tournament organized by Sri Lanka Wushu Federation.
2011   **Silver Medal,** All Island School Wushu Championship.