Sharuka Promodya Thirimanne

Masters Student at York University | ML & SE Researcher | Former Software Engineer

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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. I am highly interested in the summer internship opportunity as a software developer at BMO.

TECHNICAL SKILLS

Programming Languages	: Python, C/C++, Java, Dart
ML Packages	: NumPy, SciPy, Scikit-learn, TensorFlow, Keras, Pandas, Matplotlib
Data Handling	: Data Integration, Cleaning, Transformation, Reduction, Discretization
Version Control	: Git, GitHub, Bitbucket
Coding IDEs	: Jupyter Notebook, VS Code, Android Studio, NetBeans, PyCharm
Backend Frameworks	: Django, Django REST Framework, Redis
Databases	: PostgreSQL, MySQL
Cloud Computing	: Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure
Image Processing	: OpenCV, Scikit-Image

EDUCATION

York University — Toronto, Canada

M.Sc. Computer Science (CS) — **Sep 2022 – Apr 2024 (Expected)**

Research: Software Engineering

Courses & Grades

Machine Learning Theory	:	Neural Networks & Deep Learning (Computer Vision)	: In progress
Data Mining	:	Software Bug Detection & Tolerance	: In progress
Mining SE Data	: B+		

Sri Lanka Technological Campus (SLTC) — Colombo, Sri Lanka

B.Sc. (Honours) in Electronics & Telecommunications Engineering — **Oct 2016 – Nov 2021**

Cumulative GPA: 3.33/4 (83.25%) | Class: Second Class (Upper-Division)

WORK EXPERIENCE

Tryonics — Colombo, Sri Lanka

Software Engineer — **Aug 2021 – Aug 2022**

- Successfully developed a near duplicate image identifier to detect text images with similarities with an accuracy greater than 90%.
- Won merit award at NBQSA National awards competing with leading Sri Lankan tech companies and universities.
- Successfully demonstrated the duplicate image identifier tool to three leading insurance companies in Sri Lanka.
- Developed the backend and the APIs using Django and Django REST framework in Python.
- Core developer of the first R&D project (Duplicate Image Identifier) of the company which is being currently used by major insurance companies in Sri Lanka.

Huawei Technologies — Colombo, Sri Lanka

Internship — **Sept 2019 – Mar 2020**

- Team member of an island-wide fibre optics cable laying project (FTTx) in Sri Lanka.
- Successfully Inspected more than 250 fibre cable and civil drawings for fault identification ensuring accurate outcome while communicating with regional managers to rectify the issues identified.

PEER-REVIEWED PUBLICATIONS

Journal Publication

- "Deep Neural Network based Real-time Intrusion Detection System," Springer computer science journal, 2022.

Conference Proceedings

- "One Documentation Does Not Fit All", 20th international conference on mining software repositories (MSR*)*, Melbourne, Australia, May 2023. (To be submitted)
- "Deep Neural Network based Real-time Intrusion Detection System", 7th international conference on cyber security and privacy in communication networks, United Kingdom, December 2021.
- "Comparative Algorithm Analysis for Machine Learning Based Intrusion Detection System", 10th international conference on information & automation for sustainability (ICIAfS), Sri Lanka, August 2021.

PROJECTS

Expertise Impact on Stack Overflow (SO) Questions **Oct 2022 – Dec 2022**

Evaluated SO user expertise in ML and SE domains by employing unsupervised learning. Manually annotated TensorFlow documentation related questions to find frequent question types based on the expertise level of a developer.

Near Duplicate Image Identifier **Aug 2021 – July 2022**

Developed an algorithm in Python to detect duplicate text images (invoices, medical claims) using image processing techniques and AKAZE descriptor detection method to identify fraud and altered images. Developed the backend and the APIs using Django and the Django REST framework accordingly.

ML based Intrusion Detection System (IDS) **May 2020 – Jun 2021**

Identified the optimum ML algorithm for IDS out of 6 ML algorithms (DNN, SVM, K-NN, One-Class SVM, K-Means, and EM). Developed a real-time IDS using a trained Deep Neural Network with ML pipeline and a packet sniffer.

Password based Smart Door Lock **May 2019 – Jul 2019**

Implemented a smart door lock programmed in C to prevent unauthorised access and alert using an ATmega microcontroller and a GSM module.

Automated Car Parking Software using Java and MYSQL **Jun 2018 – Jul 2018**

Built a car park management system that visualises vacant/occupied slots, reserve, produce receipts, and notify upon exceeding time by developing a desktop application programmed in Java and MySQL for data management.

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.

CERTIFICATIONS

- Machine Learning
- Improving Deep Neural Networks
- ML with TensorFlow on GCP Specialization
- Convolutional Neural Networks
- AWS Cloud Practitioner Essentials *(2nd Edition)*
- Introduction to Data Science in Python
- Neural Networks and Deep Learning
- Introduction to Git and GitHub
- Introduction to TensorFlow for AI, ML, and DL
- GCP Fundamentals - Core Infrastructure

SOFT SKILLS

- Analytical & problem-solving
- Teamwork
- Work Independently
- Ambitious and fast learner
- Disciplined self-starter
- Passionate for experimentations

AWARDS & ACHIEVEMENTS

- Fellowship Scholarship - Fully funded scholarship to pursue masters at York University **Sep 2022**
- Gold Medal - All island Wushu tournament organized by Sri Lanka Wushu Federation **May 2012**
- Silver Medal - All Island School Wushu Championship. **Mar 2011**