CURRICULUM VITAE

Sharuka Promodya Thirimanne

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PROFILE SUMMARY

A graduate student who is currently pursuing an M.Sc. Computer Science at York University, Canada. Proven history of successful work in machine learning and software engineering with hands-on and research experiences. I have one journal publication and two published conference proceedings as the first author. Moreover, I have presented at two international conferences. As a person with graduate-level and undergraduate-level research experience, I am keen to enhance my research and development skills and dive deeper into the field of computer science while contributing to the dissemination of new knowledge. **Proven expertise in**:

- Machine Learning
- Software Engineering
- Programming: **C++, Python, Java**
- Software Development
- Cloud Computing: AWS, GCP
- Research & Development

PERSONAL

- Nationality   : Sri Lankan
- Language(s)   : Sinhala and English

MAIN RESEARCH INTERESTS

- Machine Learning
- Software Engineering
- Deep Learning
- Computer Vision
- Mining Software Engineering Data
- Data Mining & Visualization

EDUCATION

York University   *Toronto, Canada*
M.Sc. Computer Science (Reading)   **Sept 2022 – Present**

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)

De Mazenod College   *Kandana, Sri Lanka*
General Certificate of Education - Advanced Level   **Jan 2013 – Aug 2015**

PEER-REVIEWED PUBLICATIONS

1. **Journal Publication**

   S. Thirimanne, L. Jayawardana, L. Yasakethu, P. Liyanaarachchi and C. Hewage, "Deep Neural Network based Real-time Intrusion Detection System," Springer Nature's SN Computer Science journal. 3, 145 (2022). doi: 10.1007/s42979-022-01031-1.

2. **Conference Proceedings**

   S. Thirimanne, L. Jayawardana, L. Yasakethu, P. Liyanaarachchi and C. Hewage, "Deep Neural Network based Real-time Intrusion Detection System," *7th International Conference on Cyber Security and Privacy in Communication Networks*, Cardiff, United Kingdom, December 2021.

   S. Thirimanne, L. Jayawardana, P. Liyanaarachchi and L. Yasakethu, "Comparative Algorithm Analysis for Machine Learning Based Intrusion Detection System," *10th International Conference on Information and Automation for Sustainability (ICIAfS)*, pp. 191-196, doi: 10.1109/ICIAfS52090.2021.9605814. Negombo, Sri Lanka, August 2021.

CONFERENCE PRESENTATIONS

1. S. Thirimanne (10th, December 2021). "Deep Neural Network based Real-time Intrusion Detection System". Paper presented at the 7th International Conference on Cyber Security and Privacy in Communication Networks (ICCS).

2. S. Thirimanne (12th, August 2021). "Comparative Algorithm Analysis for Machine Learning Based Intrusion Detection System". Paper presented at the 10th International Conference on Information and Automation for Sustainability (ICIAfS).

WORK EXPERIENCE

York University   *Toronto, Canada*
Teaching Assistant   **Sept 2022 – Reading**

- Lab Monitoring
- Grading Assessments
- Tutoring

TRYONICS (PVT) LTD   *Colombo, Sri Lanka*
Software Engineer   **Feb 2022 – Aug 2022**

- Responsible for backend development using Django, Springboot and ASP.NET Core.
- Responsible for API development.

Trainee Software Engineer   **Aug 2021 – Jan 2022**

- Developed a near duplicate image identifier to detect text images with similarities with an accuracy over 90%.
- Developed the backend and the APIs using Django and Django REST framework in Python.

HUAWEI LANKA TECHNOLOGIES (PVT) LTD   *Colombo, Sri Lanka*
Trainee Engineer   **Sept 2019 – Mar 2020**

- Designed a fault tracking template to identify issues in cable & civil drawings.
- Inspected more than 250 fibre cable and civil drawings for fault identification.

PROJECTS

- **Near Duplicate Image Identifier**   **Aug 2021 – Nov 2021**

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

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

  Researched and identified the optimum ML algorithm for IDS out of 6 ML algorithms (DNN, SVM, K-NN, One-Class SVM, K-Means, and EM) which were trained using NSL-KDD and UNSW-NB15 datasets. Developed a real-time IDS using a trained DNN with ML pipeline.

- **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**.

TECHNICAL SKILLS

ML Packages	**:** NumPy, SciPy, Scikit-learn, TensorFlow, Keras, Pandas, Matplotlib
Operating Systems	**:** Windows, Linux
Version Control	: Git, GitHub
Hardware/ Software	**:** Microcontroller, Arduino
Software Packages	: MATLAB, Jupyter Notebook, VS Code, Android Studio, NetBeans
Frameworks	: Django, Django REST Framework, Redis. ASP.NET Core
Databases	: PostgreSQL
Technologies	: Web Scraping & Web Crawling

POSITIONS

- **IEEE Student Branch of SLTC**   **Mar 2019 – Mar 2020**
  Vice President

- **College ISAAC - SLTC**   **Feb 2019 – Feb 2020**
  President

- **De Mazenod College Wushu Team**   **Apr 2011 – Dec 2013**
  Vice-captain

AWARDS

Gold Medal

All island Wushu tournament organized by Sri Lanka Wushu Federation. **May 2012**

Silver Medal

All Island School Wushu Championship. **Mar 2011**

CERTIFICATIONS

Online certifications: Coursera/ AWS/ Pluralsight/ Qwiklabs

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

LANGUAGE PROFICIENCY

- **Sinhala** – Expert
- **English** – Fluent

  IELTS Overall Score: 7.5/9 (CEFR Level – C1/Good User)