SAYURU AMUGODA

🌐 sayurua.github.io   �8 github   📞 +94(70) 704 0430   ✉ amugodaass.21@uom.lk   in LinkedIn

PERSONAL STATEMENT

I consider myself a lifelong scholar believing in understanding and applying fundamentals and critical thinking is the core of problem solving.

Interested Areas :

`Applied Mathematics`   `Performance-Critical Software`   `Natural Language Processing`   `Signal Processing`

WORK EXPERIENCE

Software Eng./ Network Analytics Intern   Paraqum Technologies, Sri Lanka
Dec 2024 – Jun 2025

- Worked in an agile scrum team designing and implementing backend algorithms for network analysis tools.
- Gained hands-on experience in high-performance systems development programming with **C++**, using libraries such as DPDK and FastBit.
- Proposed and developed an unencrypted network sessions/ traffic detector based on payload entropy (as a measure of randomness). Now integrated into *CeyAnalyst*.
- Modified a core module of the *Network Analyzer* to adapt to the new product *Flow Analyzer* (Now Deployed).
- Miscellaneous tasks: A customized *traceroute* program; Building **Node APIs** for C++ modules.
- *Service letter*.

EDUCATION

Faculty of Engineering, University of Moratuwa   Aug 2022 - present
B.Sc. Eng. (Hons.) Electronic & Telecommunication Engineering

- CGPA : 3.75/4.0 (up to semester 6)

D. S. Senanayake College, Colombo 7   Jan 2010 - Aug 2020
GCE Advanced Level : Physical science stream, 3A (z-score - 2.5508), 40th in Colombo Dist.

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Java, MATLAB, JavaScript, SQL
C++ / Systems	DPDK, OpenGL, tcpdump, libpcap, CMake
Machine Learning & Computer Vision	PyTorch, TensorFlow, Scikit-learn, OpenCV, Pandas
Backend & Frameworks	Spring Boot, Express.js, REST APIs
Databases	PostgreSQL, MySQL
Operating Systems	Linux (Ubuntu)

PROJECTS

- **iCliQ - Wearable for Presenters & Public Speakers**   *University/Hackathon*
  For the second semester *Engineering Design Project*, we developed a wearable remote consisting of a 4-layer PCB as a convenient device for public speakers and presenters. The device can send signals at specified time flags, change slides during presentations, and function as a pointer. (See more details here.)

  `C++`   `ESP32`   `Electronics`   `SolidWorks`

- **Physics/ Graphics Engine**   *Personal/ Ongoing*
  I am working on a C++/ OpenGL based physics-graphics engine. It consists of OpenGL based shaders for rendering on GPU, from-scratch physics modeling program only using a vector mathematics library. And at the moment this is capable of modeling/ simulating dynamics under Newtonian gravity. (See more details here.)

  C++   OpenGL

- **Web-based Transformer Performance Tracker**   *University*
  This is a web application for tracking inspection records and performance of power transformers. It consists of a Spring Boot backend and a React front-end with a *YOLO* model for analyzing transformer thermal images. I worked on the Spring Boot backend with Spring Data JPA and integration of YOLO model as a microservice to the main backend. (See more details here.)

  Spring Boot   React   Roboflow

- **Training LLMs on Privacy Sensitive Data**   *University/ Final Year Project*
  We are currently working on training large language models on privacy-sensitive data in resource-constrained environments. This final year project explore the areas of split and federated learning in a scenario where the training data is distributed across multiple parties, each with limited computational resources but sharing data is not an option due to privacy concerns. (See more details here.)

- **Compression of LLMs with Knowledge Distillation**   *University*
  We implemented a deep self attention based distillation of transformer based LLMs (Wang et al.). This is the idea of using hidden states to train a smaller model with the help of a large teacher model. (See more details here.)

  Pytorch   HuggingFace

- **Robotics Competition**   *University*
  For the third semester *Robot Design and Competition*, we designed and implemented a line following, wall following, and maze solving robot capable of detecting sound and terrain slope. (See more details here.)

  C++   Arduino

COMPETITIONS

[International Mathematics Competition](#) - **Honorable Mention**   2022
[HackX 2023](#) - **Finalist** (for project *iCliQ*)   2023

LEADERSHIP, VOLUNTEERING & MEMBERSHIPS

Vice President, Mathematics Society, University of Moratuwa   2023 - 2024

- Led the education team for *Enigma* Mathematical Coding Competition 2024
- Organized educational workshops and events for university students

IEEE Student Member   2025 - Present

- Active member of the IEEE MTTS (Microwave Theory & Technology) Student Chapter.

REFERENCES

Prof. Tharaka Samarasinghe
Senior Lecturer
Department of Electronic and -
Telecommunication Engineering
University of Moratuwa, Sri Lanka
Email: tharakas@uom.lk
Phone: +94 11 2650634/5 Ext 3323

Dr. H.H.S.R. Samarasiri
Senior Lecturer
Department of Mathematics
University of Moratuwa
Email: supems@uom.lk
Phone: +94 77 362 8983
Relationship: Senior Treasurer, Mathematics Society