


Thuvaragan Sooriyakumaran

ENGINEERING UNDERGRAD · DESIGNER · DEVELOPER

✉ thuvaragan28@gmail.com  [thuvasooriya](#)  [thuvasooriya](#)  [@thuvasooriya](#)

From planet earth, loves to integrate art, science and technology to create a smile in the face of others. Moderate experience in systems programming, robotics, digital design, algorithms, and performance optimization.

Complimentary experience in web development, cross-platform app development, audio manipulation, and graphics manipulation. Currently obsessed with modular robotics, RISC-V IP design, open-source toolchains, and devops of corresponding workflows.

Projects

Qwen3-0.6B inference pipeline on custom RV32IM core in FPGA

 [thuvasooriya/ip_gemma](#)

DVCON 25 - INDIA: 1ST RUNNER'S UP

May 2025 - Sep 2025

- Research and Implementation project for DVCON25 to design a novel resource efficient accelerator IP for a custom RV32IM core
- Ran whole inference pipeline of Qwen3-0.6B with Q8 quantization and custom token embeddings

ViT Accelerator IP for a custom RISC-V core in FPGA


 [thuvasooriya/vit-malware-detector](#)

DVCON 24 - INDIA

May 2024 - Sep 2024

- Research and Implementation project for DVCON24 to design a novel ViT accelerator IP for a custom RISC-V core
- Selected in the 20 teams from >100 teams in Stage 1

Image segmentation research and evaluation for bin-picking

 [mora-bprs/sam-model](#)

SEMESTER 4 GROUP PROJECT

March 2024 - June 2024

- Extensive literary review and recreation of image segmentation and CNN model papers in python
- Development of simple gripper mechanism and associated PCB for testing
- Extensive testing, benchmarking and documentation

Smart plug product research and development

 [thuvasooriya/pluggu](#)

SEMESTER 2 GROUP PROJECT, SHORT COURSE GROUP PROJECT

Mar 2023 - May 2023

- Smart plug with remote control through LAN and WAN, developed around ESP32-S3 micro controller
- Another smart plug design and implementation was followed as part of a short course

STM32 two-wheeled line follower robot with simple manipulator

 [team-itro/sem3slrc](#)

SEMESTER 3 GROUP PROJECT

Aug 2023 - Dec 2023

- Prototyped, designed and implemented a robot that is capable of following white, colored lines
- Custom arm mechanism was designed and integrated to achieve required object manipulation

Portable doctor companion device with SBC

 [biosense-ai/biosense-ai-web-server](#)

MECHA 23 - 2ND RUNNER UP

Aug 2023 - Oct 2023

- Integrating ECG monitor and SpO_2 sensor with machine learning to make screening process easier for doctors
- Orange-Pi Zero 2W SBC is used with custom Linux to integrate monitoring, web-server and prediction algorithms

Maze Solving Micromouse

 [team-itro/kitro](#)

ROBOFEST 24

Sep 2024 - Present

- Maze Solving micromouse using STM32F411 microcontroller.
- Participated in RoboFest 24, Research on 2nd prototype ongoing.

Analog ECG monitor PCB development

SEMESTER 3 GROUP PROJECT

Aug 2023 - Oct 2023

Semester 5 Group Projects

DEMONSTRATED AS PER CORRESPONDING MODULES

Sep 2024 - Dec 2024

- RISC-V RV32I pipeline-processor research and implementation
- Single Precision FPU IP research and implementation
- Robot manipulator with 4 DOF

Semester 7 Group Projects

IN PROGRESS AS PER MODULE REQUIREMENTS

Sep 2025 - Present

- ROS2 Labs and cross-platform testing
- BitSerial Bus implementation with 3 masters and 3 slaves
- MNIST Co-Processor-Accelerator IP implementation
- Promoter Analysis

Skills

- Programming Languages

Tools
- C/C++, System{Verilog}, Python, TypeScript, Zig, Rust, Lua, Nix

English, Tamil, Sinhala, Japanese, French

KiCAD / Altium Designer, Vivado / Verilator, ROS, SolidWorks, MATLAB

Achievements

- Lead

Awards
- Deputy Batch Representative, Engineering Faculty, University of Moratuwa, Senior(Head) Prefect, 2020, Jaffna Hindu College

Right To Information Act, National Debate - 1st Place, Tamil, Team Lead, All Island Senior Dialog Drama - 3rd Place

Education

BSc. in Engineering - Electronics and Telecommunication UNIVERSITY OF MORATUWA CURRENT CGPA - 3.715	Colombo, SriLanka 2021 - Present
Charted Global Management Accounting (CGMA) ACHIEVERS LANKA CERTIFICATE LEVEL COMPLETED	Colombo, SriLanka 2021 - Present
Embedded Product Design for IoT SHORT COURSE BY ENTC DEPARTMENT UOM WITH SKILLSURF.LK	Colombo, SriLanka Aug 2023 - Nov 2023
<ul style="list-style-type: none">PCB design, firmware development, enclosure design in OnShape, end 2 end connectivity in web dashboard	
System {Verilog} for ASIC/FPGA Design & Simulation SHORT COURSE BY ENTC DEPARTMENT UOM WITH SKILLSURF.LK	Colombo, SriLanka Jan 2023 - May 2023
<ul style="list-style-type: none">Assignment 3 - ASIC flow report for MVM UART using SAED 32nm EDK & Synopsys design compilerAssignment 4 - FPGA implementation and demo of MVM UART	
Full Stack Web Development (MERN Stack) UKI CODING SCHOOL - DIGITAL COHORT 1	Jaffna, SriLanka Feb 2021 - July 2021
Secondary Education JAFFNA HINDU COLLEGE G.C.E. OL - 9A G.C.E. AL - 3A	Jaffna, SriLanka 2011 - 2020

Experience

Research Assistant - Internship SCHOOL OF COMPUTER SCIENCE AND ENGINEERING (SCSE), NTU	Remote - Singapore 2024 Dec - 2025 Jul
<ul style="list-style-type: none">C99 Bundle adjustment implementationImplementation and comparision of QEMU, LiteX-Sim, Chipyard, and ZCU-102 compilation and workflowsLiterary review of Vector processing options for Rocket coreARM core and Rocket core shared memory implementation of SLAM workflow	
Junior Graphic Designer MATHI COLOURS PRINTERS	Jaffna, SriLanka 2020 - 2021
Digital Marketing Assistant ECOSTEEM PVT. LTD.	Jaffna, SriLanka 2021

References

Dr. Ranga Rodrigo B.Sc. ENG. HONS. (MORATUWA), M.E.SC. (WESTERN, CANADA), PH.D. (WESTERN, CANADA), SMIEEE SENIOR LECTURER, UNIVERSITY OF MORATUWA	ranga@uom.lk
Senthilmaran Ratnam PRINCIPAL, JAFFNA HINDU COLLEGE LLB LAW HONS.	senthilmaran@gmail.com