

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. Past experience in web development, graphics manipulation. Currently obsessed with modular robotics, RISC-V IP design, and open-source toolchains.

Projects

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

DVCON 24 - INDIA

🌐 thuvasooriya/vit-malware-detector

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

Robot manipulator with 4 DOF

SEMESTER 5 GROUP PROJECT | CURRENTLY IN PROTOTYPING PHASE

Sep 2024 - Present

RISC-V RV32I pipeline-processor research and implementation

SEMESTER 5 GROUP PROJECT | CURRENTLY IN LITERARY REVIEW PHASE

Sep 2024 - Present

Image segmentation research and evaluation for bin-picking

SEMESTER 4 GROUP PROJECT

🌐 mora-bprs/sam-model

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

SEMESTER 2 GROUP PROJECT, SHORT COURSE GROUP PROJECT

🌐 thuvasooriya/pluggu

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

SEMESTER 3 GROUP PROJECT

🌐 team-itro/sem3slrc

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

MECHA 23 - 2ND RUNNER UP

🌐 biosense-ai/biosense-ai-web-server

Aug 2023 - Oct 2023

- Integrating ECG monitor and SpO₂ sensor with machine learning to provide helpful information in a web dashboard in any device 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

ROBOFEST 24

🌐 team-itro/kitro

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

Skills

Programming C/C++, System{Verilog}, Python, JavaScript, Zig, Lua, Nix

Languages English, Tamil, Sinhala, Japanese, French

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

Achievements

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

Awards 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

Chartered 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

- 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

- Assignment 3 - ASIC flow report for MVM UART using SAED 32nm EDK & Synopsys design compiler
- Assignment 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

Junior Graphic Designer

MATHI COLOURS PRINTERS

Jaffna, SriLanka

2020 - 2021

- Flyer creation and editing
- Graphic manipulation
- Magazines and books compilation and editing

Digital Marketing Assistant

ECOSTEEM PVT. LTD.

Jaffna, SriLanka

2021

- Social media content creation and moderation
- Product modeling and marketing image generation
- Banner designs

References

Dr. Ranga Rodrigo

B.SC. ENG. HONS. (MORATUWA), M.E.SC. (WESTERN, CANADA), PH.D. (WESTERN, CANADA), SMIEEE
SENIOR LECTURER, UNIVERSITY OF MORATUWA

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Senthilmaran Ratnam

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