

RUSIRU THUSHARA

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🏠 [hackerrank/thusharakart](#)

PROFILE

As an MS student at Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), I specialize in Vision Language Modeling, building upon a solid foundation in Computer Vision and Machine Learning. My passion for technology is demonstrated through a history of success in national-level hackathons and a knack for innovative problem-solving. Eager to embrace new challenges, I continuously seek opportunities that advance my expertise in the cutting-edge domains of AI.

RESEARCH INTERESTS

- Computer Vision
- Self-Supervised Learning
- Video Modeling
- Bio Informatics

EXPERIENCE

Wadduwage Lab, Harvard University, USA

Jan. 2022 - July 2022

Remote Research Fellow - Full Time Internship

Developed deep learning-based object detection algorithms for DNA damage repair toxicology assays to detect gamma H2AX foci in cellular nuclei images and detecting and quantifying homologous recombination events in rare fluorescent mutant cells deep within the tissue of RaDR mice.

BioMedInfo Lab, University of North Florida, USA

Jan. 2022 - July 2022

External Research Intern - Part Time

Developing deep learning based algorithms for Automated Protein Function Prediction on Human Phenotype Ontology.

SternX Engineering (Pvt) Limited

March 2021 - Present

Software Team Lead - Self Employed

Team leader of an eight-member software developer team who follows Scrum methodologies to deliver web and mobile applications for clients.

Instructor and Teaching Assistant | University of Peradeniya

2020 - 2023

CO322 : Data Structures and Algorithms for 3rd year Computer Engineering undergraduates

CO324 : Network and Web Application Design for 3rd year Computer Engineering undergraduates

CO321 : Embedded Systems for 3rd year Computer Engineering undergraduates

CO253 : Programming and Networking for Electrical and Electronic Engineering undergraduates

GP106 : Computing for all 1st year undergraduates

EDUCATION

Mohamed bin Zayed University of Artificial Intelligence, UAE

Aug. 2023 - Present

M.Sc. in Computer Vision **CGPA: 3.90/4.00**

University of Peradeniya, Sri Lanka

Nov. 2017 - Feb. 2023

B.Sc. Engineering(Hons.) Computer Engineering **CGPA: 3.85/4.00**

SPARK X Professional Development Program | Spark Academy, Sri Lanka

March 2021 - Sep. 2021

A 6-month industry readiness program for software engineers that includes technical modules like developing and delivering real-world applications, creative problem solving, and soft skills like empathy, communication, leadership, professionalism, and ethics. Earned a full scholarship during the selection process.




MOOCs

Deep Learning Specialization deeplearning.ai Coursera	2020
AI for Medicine Specialization deeplearning.ai Coursera	2020
Data Structures and Algorithms Specialization UC San Diego Coursera	2020
AWS Computer Vision: Getting started with GluonCV AWS Coursera	2020

HONORS & AWARDS

1st Place of Code Squad 3.0 (of 150+ teams)	Nov. 2022
6 hour competitive programming competition for university undergraduates in Sri Lanka.	
2nd Runner up of MoraXtreme 7.0 (of 180+ teams)	Oct. 2022
12 hour competitive programming competition for university undergraduates in Sri Lanka.	
5th National rank of IEEEExtreme 16.0 (of 6300+ global teams)	Oct. 2022
24 hour competitive programming competition for university undergraduates worldwide.	
1st Runner up of MoraXtreme 6.0 (of 180+ teams)	Oct. 2021
12 hour competitive programming competition for university undergraduates in Sri Lanka.	
1st Runner up of Douthan 1.0 (of 80+ teams)	Feb. 2021
12 hour competitive programming competition for university undergraduates in Sri Lanka.	
208th world rank of IEEEExtreme 15.0 (of 5500+ global teams)	Oct. 2021
24 hour competitive programming competition for university undergraduates worldwide.	
1st, 2nd, 1st Country Rank in Hack the Interview IV,V,VI (Asia Pacific)	2020
60 hours competitive coding contest on hackerrank	
Placed 1st, 2nd, 1st country rank and 88/4353, 343/3077, 195/2530 respectively in Asia Pacific region	
2nd Runner up of HackDown 2020 (of 200+ teams) Competitive programming competition	Apr. 2020
2nd Runner up of hackStat 2.0 (of 90+ teams)	Oct. 2019
Competition in data analysis and prediction on an insurance data set.	
2nd Runner up of UoJCoders v1.0 (of 100+ teams)	March 2019
Competitive programming competition for university undergraduates in Sri Lanka.	
Top 20 National rank of IEEEExtreme 14.0 (of 2000+ global teams)	Oct. 2020
24 hour competitive programming competition for university undergraduates worldwide.	
1680th global rank of Facebook Hacker Cup 2020 (of 32500+ global participants)	July 2020
Top 20 country rank of Google Code Jam, Hash Code, Kick Start	2019 - 2020
Gold Medal in Sri Lankan Physics Olympiad National Rank - 2nd	2016
An annual competition held among high school students to select delegations for the APhO and IPHO.	

PROJECTS

PG-Video-LLaVA: Pixel Grounding Large Video-Language Models   	2023
Shehan Munasinghe*, Rusiru Thushara*, Muhammad Maaz, Hanoona Rasheed, Salman Khan, Mubarak Shah, Fahad S. Khan	
<ul style="list-style-type: none">Extends image-based LLMs to videos understanding, incorporating audio transcripts for enhanced context understanding, introducing a baseline framework and benchmark for conversation-driven spatial grounding.	
Open World Object Detection and Discovery	2022 - 2023
Final Year Thesis Project University of Peradeniya	
Advisors - Prof. Salman Khan, Prof. Roshan Ragel, Eng. Gihan Jayatilake	
<ul style="list-style-type: none">Investigation of self-supervised, contrastive learning approaches on open-world object detection for unknown object clustering.Usage of Vision Transformers for object detection with incremental learning.	

Advisors - Dr. Dushan N. Wadduwage, Prof. Bevin P. Engelward

- Investigation on leveraging deep learning approaches for detecting and quantifying homologous recombination events in rare fluorescent mutant cells deep within the tissue of RaDR mice
- Usage of deep learning architectures for object detection, classification, and segmentation

Protein Function Prediction with Human Phenotype Ontology

2022

Advisors - Prof. Indika Kahanda

- Exploring deep learning approaches for categorize human abnormal phenotypes and their semantic relationships.
- Usage of Graph Transformer Networks(GTNs) for predicting HPO annotations of human protein.

Prediction of Depths, Normals, and Surface Curvature from RGB Images using CNNs

2021

Advisors - Dr. Upul Jayasinghe, Eng. Sampath Deegalla

- Applying deep neural networks for estimating the depth map, surface normals, and surface curvature from RGB images.

Fuzzy Based Recommendation System for Research Area Selection

2021

Advisors - Dr. Upul Jayasinghe

- Developed a fuzzy-based recommendation system that suggests suitable research areas for students depending on the skills and interests of the student and the scope of the research area of the supervisors.

Swarm Robots Platform

2021

Obstacle bots that are localized with an overhead camera setup with the capability of positioning themselves without collisions forming challenging patterns.

Technologies: [Django](#), [OpenCV](#), [Numpy](#), [Three.js](#), [CSS](#), [HTML](#), [MQTT](#), [GRPC](#)

Techniques: [Stochastic gradient descent](#), [PID](#), [Image processing](#), [Encryption](#)

National Covid 19 Management System

2021

Full-stack web application showcasing country level, district level, hospital level, and overall patient statistics of daily Covid-19 updates and the patient management system.

Technologies: [Java](#), [Spring Boot](#), [Spring Data JPA](#), [Hibernate](#), [Spring Security](#), [React](#), [PostgreSQL](#)

Airport Ticket Booking System

2020

Web application and Mobile Application with a Database Management System for passengers and airports.

Technologies: [Dart](#), [MySQL](#), [PHP](#), [HTML](#), [CSS](#)

Crossword Puzzle Game

2021

An instant game developed for Facebook focusing children where they can select and solve a crossword puzzle.

Technologies: [React.js](#)

TECHNICAL STRENGTHS

Languages	Python, Java, C/C++, JavaScript	Modeling	PyTorch, Scikit-Learn, NumPy, Pandas
Mobile Development	Native Android, Flutter	Frontend	Reactjs, Bootstrap, HTML/CSS
Databases	MySQL, PostgreSQL, MongoDB	Backend	Spring Boot, Nodejs, Expressjs, Django

REFERENCE

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