

Suren Sritharan

Email: suren.sritharan@tum.de

Website: suren3141.github.io

EDUCATION

- M.Sc. Informatics (Computer Science)** Oct 2021 - present
Technical University of Munich
- B.Sc. Engineering (Specializing in Computer Engineering)** Jan 2016 - July 2020
University of Peradeniya - GPA of 4.0/4.0 (Top of my class of 400+ students)

WORK EXPERIENCE

- Working student** at AstraZeneca Computational Pathology, Germany May 2023 - present
Relating computer vision metrics with optical density measurements in image analysis of tumorous cells.
- Student Research Assistant (Hiwi)** at Technical University of Munich, Germany Dec 2021 - March 2023
Study on uncertainty estimation in Graph Neural Networks (DAML lab)
Monocular object detection and tracking for autonomous driving tasks (Providentia++ project)
- Research Assistant** at Sri Lanka Technological Campus, Sri Lanka Aug 2020 - Sep 2021
Intrinsic image decomposition (IID) and image enhancement under varying illumination conditions.
- Autonomous wireless network research intern**, Nokia Bell Labs, Belgium Feb 2019 - Aug 2019
Study on the limitations of machine learning models for wireless 5G networks and beyond.

SELECTED PROJECTS

- Cooperative perception through deep fusion for autonomous driving applications** 2023
- 3D object detection through multimodal (LiDAR, camera) multiview (road-side, vehicular) sensor fusion.
 - The proposed cooperative transformer-based deep fusion model leads to +6.2 mAP increase compared to vehicular fusion.
- Monocular 3D object detection and birds-eye-view tracking** 2022
- Estimated the 3D position of vehicles from monocular images taken from infrastructure cameras through semantic segmentation and pose estimation + tracking through coordinate transformation to BEV.
 - Late fusion model developed based on the monocular detector improved the SOTA mAP by +1.62.
- Anomaly detection during production process through images** 2022
- Created an efficient ML pipeline using PyTorch to detect anomalies at the image and pixel levels with recall rate of 97%. This has been successfully deployed at Siemens GWE, to identify the anomalies in images captured during the production process of heat sinks.
 - Performed hyper-parameter tuning through Optuna and WandB, and deployment + testing using ZenML.
- Low light image enhancement and interpretation** 2020
- Proposed a cyclic-GAN-based model for illumination enhancement trained with both paired and unpaired images which provides near-SOTA efficacy and higher efficiency.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, C++, R, MATLAB, Javascript
- **ML Tools:** PyTorch, TensorFlow, MLflow, ZenML, Weka
- **Other tools and Technologies:** Docker, ROS, Open3D, CARLA Simulator, HTML, CSS, Django, NodeJS, Nginx, MySQL

PUBLICATIONS

PEER-REVIEWED JOURNAL

S. Sritharan, H. Weligampola, and H. Gacanin, "A Study on Deep Learning for Latency Constraint Applications in Beyond 5G Wireless Systems" in *IEEE Access*, vol. 8, pp. 218037-218061, 2020.

<https://ieeexplore.ieee.org/document/9268052>

G.Jayatilaka, J.Hassan, **S.Sritharan**, J.Senanayaka, H.Weligampola, R.Godaliyadda, P.Ekanayake, V.Herath, J.Ekanayake, S.Dharmaratne, "Holistic Interpretation of Public Scenes Using Computer Vision and Temporal Graphs to Identify Social Distancing Violations." in *Applied Sciences*, vol 12 no 17, pp 8428, 2022

<https://www.mdpi.com/2076-3417/12/17/8428>

INTERNATIONAL CONFERENCE

H.S. Weligampola, G.C. Jayatilaka, **S. Sritharan**, P. Ekanayaka, R. Ragel, and V. Herath, R. Godaliyadda, "An Optical physics inspired CNN approach for intrinsic image decomposition", IEEE International Conference on Image Processing (ICIP), 2021. <https://ieeexplore.ieee.org/abstract/document/9506375>

G.C. Jayatilaka*, H.S. Weligampola*, **S. Sritharan***, P. Pathmanathan, R. Ragel, and I. Nawinne."Non-contact Infant Sleep Apnea Detection" 14th IEEE International Conference on Industrial and Information Systems (ICIIS), 2019. <https://ieeexplore.ieee.org/document/9063269>

H.S. Weligampola, G.C. Jayatilaka, **S. Sritharan**, R. Godaliyadda, P. Ekanayaka, R. Ragel, and V. Herath, "A Retinex Based GAN Pipeline to Utilize Paired and Unpaired Datasets for Enhancing Low Light Images", Moratuwa Engineering Research Conference (MERCon), 2020.

<https://ieeexplore.ieee.org/document/9185373>

AWARDS AND RECOGNITION

Deutschlandstipendium	2022
Merit-based scholarship awarded by the federal government of Germany.	
Best Performance in Engineering	2020
C. A. Hewavitharana Prize for best academic performance in Engineering.	
Award for best final year thesis	2020
Prof. E. F. Bartholomeusz Endowment award for the best Final Year Project.	
Huawei - Seeds for the Future	2019
Represented Sri Lanka at the Huawei Seeds for the Future program held in China.	
IEEE Xtreme 13.0 - 2nd Country Rank, 64th World Rank	2019
24-hour Worldwide competitive programming competition organized by IEEE.	
IEEE Xtreme 12.0 - 2nd Country Rank, 79th World Rank	2018
Humanitarian Product Competition: IEEE R10 - 1st place	2018
Product development competition organized by IEEE for Asia Pacific region.	
Google Code Jam - Qualified to R1 (with top country ranks at qualifications)	2017, 2018, 2019
Worldwide competitive programming competition organized by Google.	
IEEE Xtreme 11.0 - 1st Country Rank, 113th World Rank	2017
Mahapola Higher Education Scholarship	2016
Merit-based scholarship awarded by government of Sri Lanka for performance at GCE A/L examination.	