

Bimsara Pathiraja

PROJECTS

Self-Driving Car Stage 2

June 2021 – Present

Final year project of the university on 3D dynamic object detection and tracking, trajectory prediction, depth completion using images, bird's-eye-view map generation using camera images, vehicle intention prediction using signal lights and data collection using cameras and LiDAR.

Corrosion Detection – Creative Software

Oct – Mar 2021

Worked on semantic segmentation for corrosion detection using U-Net. Project included literature review, synthetic data generation using Unity, model writing and testing, using custom loss functions and documentation.

Object Detection – Creative Software

Jan– Mar 2021

Used Detectron2 for object detection in an industrial environment. Worked on image annotation and custom data loader building and testing.

FPGA processor for Matrix Multiplication

Oct – Jan 2021

Designed an Instruction Set Architecture and implemented using Verilog HDL for a single input multi-threaded FPGA for any compatible matrix multiplication. Used Intel Quartus Prime, Xilinx and Modelsim for testing and simulations.

Garment generation - NeurIPS

April – Oct 2020

3D Texture garment reconstruction using CLOTH3D dataset and SMPL body parameters. PyMesh, Open3d, Meshlab, MeshlabXML, Pytorch Geometric libraires were used.

DSS– SLIOT Competition

April – Oct 2019

Deep Surveillance System, an IoT device which is triggered by threatening sounds to activate the camera. Urban 8K sound dataset and TensorFlow were used for model training. Implemented using Raspberry Pi, OpenCV and Azure.

EXTRA CURRICULAR ACTIVITIES

Project Chairperson – Rotaract Club

Maestro – All island business case study competition

Joy of Christmas – Charity project for down syndrome children

TECHNICAL SKILLS

Programming	Python, MATLAB
Deep Learning	Pytorch, TensorFlow
Computer Vision	OpenCV
Game Development	Unity
Project Management	Git, Jira, Trello
Cloud Services	Azure, Google Cloud Computing
Other Software & Tools	Linux, SSH, Jupyter, LaTeX

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EDUCATION

University of Moratuwa

Aug 2017 - Present

BSc(Hons) Eng. - Electronic and

Telecommunication Engineering

Expected Graduation: April 2022

Cumulative GPA: 3.81 / 4.2

Maliyadeva College

2008 - 2016

Physical Science

G. C. E. Advanced Level: 3As

Island Rank: 58

Other courses

- CS224w: Machine Learning with Graphs – ongoing - Stanford University
- CS224n: Natural Language Processing with Deep Learning - Stanford University
- CS231n: Convolutional Neural Networks for Visual Recognition - Stanford University
- Deep Learning Specialization 5 courses Deeplearning.ai - Coursera
- Machine Learning – Stanford University Coursera

Competitions

- Datastorm competition – 5th place – 2020
- SLIOT competition – 3rd place – 2019
- iHack competition – 3rd place - 2019

WORK EXPERIENCE

promiseQ, Germany

Jan 2022 – Present

Machine Learning Engineer (Part-time remote)

Model building, testing and deployment for object detection.

Creative Software

Oct – Mar 2021

Intern – Machine Learning

Worked on corrosion detection and object detection projects, and synthetic data generation using Unity game development platform.

Ceyentra Technologies

July – Aug 2019

Intern

Worked on Mediturn-IoT, an IoT patient notifying system for medical centers using MQTT protocol.