Mayura Manawadu

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Mayura Manawadu | mayura1996

Education

MS - Kyungpook National University — Deagu, South Korea
March. 2023 to Nov. 2024

- Thesis Title **6DoF Pose Estimation Using Uncontrolled Single RGB Images**
- Research Specialization **Computer Vision, Extended Reality, Deep Learning**
- GPA: 4.3/4.3 (Transcript)
- **Coursework:** Advanced Computer Vision, Machine Learning, Pattern Recognition, Brain Science, Introduction to Research Paper Writing etc.

B.Sc.Eng. (Hons) in Computer Engineering - University of Sri Jayewardenepura — Colombo, Sri Lanka
Nov. 2018 to Nov. 2022

- GPA: 3.76/4.0 (Transcript) - 2^{nd} highest GPA holder in the Department of Computer Engineering
- Dean's List in 4 semesters
- **Coursework:** Computer Vision & Image Processing, Advanced Computer Algorithms, Data Structures and Algorithms, Machine Learning, Natural Language Processing, Intelligent Systems etc.

Experience

Computer & Robot Vision Laboratory - KNU, Graduate Research Assistant — Daegu, South Korea
Nov. 2021 to March 2023
2 months

- Research on estimating 6DoF Pose and Focal Length from a single "in-the-wild" obtained RGB images without metadata.
- Non Rigid ICP evaluation in house furniture - in collaboration with XR Project of Electronics and Telecommunications Research Institute (ETRI), South Korea
- Preparation of a chair dataset with annotations of focal length and 6DoF pose which comprised of RGB images and corresponding CAD models obtained from Shapenet Dataset.

London Stock Exchange Group, Software Engineer(Service Letter) — Colombo, Sri Lanka
Nov. 2021 to March 2023
1 year 4 months

- Implementation of real-time and offline stat generation for Market Maker Monitoring at Qatar Stock Exchange using Apache Spark, Flink, and Kafka.
- Benchmarked query performance of Impala on Parquet, Trio on Iceberg, and Trino on Hudi in Amazon S3 to be used in Millennium Analytics of London Stock Exchange.
- Contributed for development of Millennium Surveillance 5.1 for fault tolerance and process management, aligning with Oracle updates for the disaster recovery site of London Stock Exchange.
- Contributed for development of Disaster Recovery for the London Stock Exchange, improving database fault tolerance and secondary site connectivity.

Publications

Enhancing 6DoF Pose and Focal Length Estimation from Uncontrolled RGB Images for Robotics Vision - Workshop on 3DVRM - ICRA 2024, Yokohoma, Japan — May. 2024

M. Manawadu, S. Park

Paper ()

Advancing 6D Pose Estimation in Augmented Reality–Overcoming Projection Ambiguity with Uncontrolled Imagery - IPIU 2024, Jeju, South Korea — Mar. 2024

M. Manawadu, S. Park

Paper ()

Predictive Analysis of Accidents Based on US Accident Data - ICTC 2023, Jeju, South Korea — Nov. 2023

M. Manawadu, U. Wijenayake

Paper ()

Voice-assisted real-time traffic sign recognition system using convolutional neural network - Best Track Paper Award - ICARC 2021 — Feb. 2021

M. Manawadu, U. Wijenayake

Paper ()

Abhises - An Intelligent Virtual Tour Guide - Manuscript in preparation

M. Manawadu, G. Chathuranga, M. Wijesinghe, C. Weerasooriya, U. Wijenayake — Paper () Expected 2024

Projects

Abhises - An Intelligent AR Based Virtual Tour Guide — June. 2022

- Augmented Reality based virtual assistant which interacts as a conversational agent to Guide the tourists visiting Sigiriya. We have used SLAM for Marker-less object Registration and IBM Watson to provide intelligence to AR character “Abhises”.
- Used Augmented Reality, Computer Vision, Natural Language Processing | Unity | AR Foundation | IBM Watson | Azure Spatial Anchors

Voice-Assisted Real-Time Traffic Sign Recognition System using Convolutional Neural Network — 2003 to 2004

- A computer vision-based Traffic Sign Detection System that detects the traffic signs in real-time and outputs the meaning depicted by the traffic sign using an audio message.
- Used C, OpenCV | TensorFlow | Google Text to Speech API | Darknet |PyQt5

Predictive Analysis of Accidents Based on US Accidents Data — Jan. 2002

- The front end is a mobile application which alerts the drivers with real time predictions about the probabilities of accidents. The backend predicts the probability using the publicly available API calls which gathers environmental stimuli of driver’s location.
- TensorFlow | Python | React Native | Flask | NumPy | Pandas | Sci-kit Learn

Additional Experience and Awards

Gold Medalist - Department of Interdisciplinary Studies, Faculty of Engineering, University of Sri Jayewardenepura
Awarded for outstanding academic and extracurricular performances during undergraduate studies.

Best Paper in Data Science and Applications Track – ICARC 2021
Paper Title: *Voice-assisted real-time traffic sign recognition system using convolutional neural network*

9^{th} **Place in Sri Lanka - IEEEXtreme – 13.0**

Technologies

Languages: C++, Python, C, Java, Scala,SQL, JavaScript

Tools and Technologies: PyTorch, Unity, Tensorflow, OpenCV, Open3D, PyBullet