Praveen Kumar Rajendran

Personal info

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Summary

I'm currently pursuing M.S. degree at KAIST. Earlier, I worked with SL Corporation as a Software Engineer on Software Testing for LDM, E-Shifters and ADAS systems. My research interests include deep learning, 3D computer vision and autonomous driving.

Work experience

03/2021 – PRESENT DAEJEON, SOUTH KOREA
Graduate Student Researcher
Korea Advanced Institute of Science and Technology

- Worked on ***accident prevention ADAS*** system using OpenCV, Deep learning-CNN, and Transfer Learning.
- Worked with ROS for the ***parking robot*** project.
- Collaborated on ***PMD path planning*** and trajectory prediction in heterogeneous traffic
- Working on ***camera pose estimation*** problems with deep learning
- Working on ***point cloud GAN***

11/2017 – 02/2021 CHENNAI(IN), DAEGU(KR)
Automotive Embedded Software Engineer
SL Lumax and SL Corporation

- **Part Leader** for the Indian software verification Team at SL Corporation.
- creating and carrying out unit testing plans for LDM, Chassis, ADAS, Door side object detection system, Intelligent battery management system, and Camera monitoring system.
- **Performed more than 250+ unit testing projects.**
- creating test cases and regression testing of application and board support package software.
- Analysing design documents, managing defect detection, test report and closure activities.
- Sent to HQ to closely work with developers and test engineers of various countries such as the USA, China, Korea and India.

01/2016 – 03/2016 CHENNAI, INDIA
Robotics & Embedded Systems Intern
Aerobotix

- Trained to work with Arduino UNO, Electronics, Sensors, Actuators and Programming microcontrollers
- Built different robotics applications such as line follower, RC boat, RC hovercraft
- Hands-on experience on Bluetooth and various modules for navigation

Education

03/2021 – PRESENT
Korea Advanced Institute of Science and Technology | GPA 3.9/4.3
M.S. (Future Vehicle Program)
Subjects: AI/ML, DL, Computer Vision, Autonomous Vehicle Systems

2021
Udacity
Self-Driving Car Engineer Nanodegree | 9 Projects
Term 1: Computer Vision, Deep Learning, and Sensor Fusion
Term 2: Localization, Path Planning, Control, and System Integration

06/2013 – 05/2017
Anna University, Chennai | CGPA 8.10 / 10
B.E. (Electrical and Electronics Engineering)
Subjects: Mathematics, Circuit Theory, Electrical Machines, Power Electronics, Embedded Systems, Control Systems, Object-Oriented Programming

Achievements & Recognitions

- Accepted to the **Oxford ML Summer School** *(OxML)* Jun 2022
- Full-funding support by **KAIST scholarship** for MS in Future Vehicle Program, Mar 2021
- Chosen for a **leadership position for a team of 24** people in SL Corporation.
- Recipient of **Udacity Technology Scholarship** powered by Bertelsmann for AI Track, Nov 2019
- Awarded **Korea cycling road grand slam** by K-Water for completion of cycling route of 1837KM, Republic of Korea, Aug 2019
- **Go green award** for making an efficient solar vehicle for Asia's largest solar vehicle competition, ESVC, Mar 2017
- Won **2nd prize** for the Robotics event of PATHFINDER(Line Follower) in the national level technical symposium VISION 2016 organized by Anna University, Chennai, Apr 2016
- **School topper** in on Higher secondary public examination, Mar 2013

Certifications

Self Driving Car Engineer Nanodegree
Udacity

Probabilistic Graphical Models 1: Representation
Stanford University

Deep Learning Specialization (Prof. Andrew Ng)
deeplearning.ai

Machine Learning (Prof. Andrew Ng)
Stanford University

Certifications

TensorFlow in Practice Specialization
deeplearning.ai

TensorFlow: Data and Deployment Specialization
deeplearning.ai

ISTQB Certified Tester
Korean Software Testing Qualifications Board

Korea Cycling Road Grand Slam
K-Water

SKILLS SUMMARY

LANGUAGES

Tamil	**Native**
English	**Professional**
Korean	**TOPIK Level 1**

PROGRAMMING

C	**Professional**
Python	**Professional**
MATLAB	**Limited**
C++	**Limited**

TECHNICAL SKILLS

Embedded systems
Software testing
Deep learning
Robotics

TOOLS & FRAMEWORKS

Codescroll controller tester	**Professional**
VectorCAST	**Professional**
Git	**Professional**
PyTorch	**Professional**
TensorFlow	**Professional**
Pandas	**Professional**
NumPy	**Professional**
OpenCV	**Limited**
ROS	**Limited**

Academic Projects

2021
End-to-End Autonomous Driving - PD551 KAIST
End-to-End autonomous driving using imitation learning (Inspired by the famous NVIDIA paper) with the data collected from CARLA

2021
Perception for AVs - PD803 KAIST
Camera Calibration, 3D Reconstruction

2021
Deep Learning - AI502 KAIST
DCN Model Analysis with various optimizers and regularization techniques. LSTM, Transformer, BERT for extractive Q&A.

2021
Operating System - EE415 KAIST
Kernel Threading, Process Scheduler, Nullptr Dereferences and Shared Page Handler, Filesystem Optimization(for small files)

03/2017
Electric solar vehicle
ESVC-2017
Made a Conventional Solar vehicle from scratch at low cost

Academic Projects

with a team of twenty five members for the Asia's largest solar vehicle championship. Secured 21st place out of 150 teams from all over asia. I was the vice captain of the team.

02/2017
MPPT Controller
Bharat heavy Electricals Limited - Trichy 2017
Arduino based MPPT controller for solar-powered two-ton trolley for the extraction maximum available power from the solar panel advised by Dr Kevin ark kumar, BHEL Trichy.

2016
Robotic Arm
2016
With the help of flex sensors, various motors and 3D printed objects made a robotic arm which will perform all the actions done by human hand simultaneously.

Publications

RelMobNet: End-to-end relative camera pose estimation using a robust two-stage training
Praveen Kumar Rajendran, S Mishra, L F Santos V, and D Har
https://arxiv.org/abs/2202.12838 [**ECCV Workshop - Accepted**]

Sensing accident-prone features in urban scenes for proactive driving and accident prevention
S Mishra, **Praveen Kumar Rajendran**, L F Santos V, and D Har
https://arxiv.org/abs/2202.12788 [**IEEE-ITS** IF=9.551 **- Review**]

Socially acceptable route planning and trajectory behavior analysis of personal mobility device for mobility management with improved sensing
S Mishra, **Praveen Kumar Rajendran**, and D Har
https://arxiv.org/abs/2112.03526 [**RiTA 2021 - Accepted**]

Public Profiles

LinkedIn GitHub Medium

Volunteering

2016 CHENNAI
Workshop Co-ordinator
Aerobotix

2016 CHENNAI
Student Co-ordinator for Robotics club
Veltech Multitech Engineering College

Hobbies

Cycling Hiking Cricket
Exploring Photography Running