# 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 DAEGU, SOUTH KOREA
### Automotive Embedded Software Engineer
**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**

## Academic Projects

Made a Conventional Solar vehicle from scratch at low cost 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

**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

**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

## 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