

## Education

### M.Tech | Manufacturing Systems Management

Government Engineering College,  
Thrissur, Kerala, India | 2018-2020

- Thesis: Industrial Bin-Picking Robot, Computer Vision, Deep Learning
- Honour: Project Fellow at Nodal Centre for Robotics & AI (NCRAI), Thrissur.
- CGPA: 8.14

### B.Tech | Mechatronics Engineering

Nehru College of Engineering &  
Research Centre, Thrissur, Kerala,  
India | 2013-2017

- Honours: Won prizes in Robo-War competitions throughout Kerala. Full tuition & fees waiver scholarships.
- CGPA: 7.31

## Graduate Project

### Autopilot Drone

Developed an "AUTOPILOT DRONE" and tested successfully as a part of B.Tech Main Project. It is implemented using Arduino Mega 2.7 microcontroller with LEA-6H GPS and Telemetry Radio (433 MHz) (XT-60). Drone pathway was set using Mission Planar software and Tower App. A camera is fixed the drone, from which live feed and recording of video could be made possible with the use of the software, HONESTECH 2.5 installed on a laptop.

## Master Project

### Development and Evaluation of a Deep Learning based Robotic Bin Picking Vision System using ROS

Using PyTorch deeplearning framework, a 6-DoF Poses of objects in the bin is estimated and it has experimented with the usability of depth sensing cameras in operation room lighting. Creation of the 3D object models is done using the Blender tool, which is for Generating synthetic training dataset with the help of Unreal Engine(UE4) and NVidia Deep Learning Data Synthesizer(NDDS) software. By deep-learning the created model, the object poses with adequate accuracy required for semantic grasping by any robot is obtained. The overall system is implemented using ROS framework.

<https://avinashsen707.github.io/>

## Experience

### Sr. Asst. Maintenance Engineer

#### Lazza Ice Creams India

July 2017 – August 2018

- Worked with AGVs using active RFIDs, PLC systems, Sensors, Extrusion lines, etc.
- Performed Ice-cream Automation Machine technical maintenance and Defective analysis.
- Supervised technical side of the Factory, Factory inspection, on the job inspection and Factory Erection work inspection.
- Assisted Cold storage technical maintenance and Ensured spare stock checking.

## Skills

### Languages

• Python • C++ • C • Shell Script

### Machine Learning

Frameworks

• PyTorch • Tensorflow • Keras

Algorithms

• CNN • RNN • LSTM

### Game Engine and 3D Software

• Unreal Engine 4 • Blender

### General

OS Frameworks

• ROS (Robot Operating System)

Web

• MySQL • HTML • JavaScript

## Professional Training

### Professional in Product Design using software Autocad, Catia & Ansys.

CADD Centre Thrissur, Kerala, India | June, 2017

### SAP ABAP course TAW10 & TAW12 (Coll10).

NCERC Labs, Thrissur, India | May, 2017

## Papers

- "Detection and Pose Estimated Grasping in Industrial Robot for Bin Picking Operations" in the Proceedings of the *International Colloquium on Recent Trends in Engineering (IC@MACE)-2020*.

## Awards & Achievements

- Received First Prize for the Technical Paper Competition organized by Robotics and Automation Society of IEEE SB GEC Thrissur, 2020.
- Received Second Prize in National Level Multifest for the event ROBO-WAR 2017.
- Elected as Treasurer of Mechatronics Association of the college for the academic year 2015-17.
- Elected as Volunteer of National Service Scheme (NSS) Unit-209 for the academic year 2015-17.
- Played as Captain and Wicket-keeper in the Berckumens Cricket League-2013 Runners Up, Archdiocese Thrissur.

