Sushma **Subhas** Chandra

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EDUCATION

Northwestern University **Evanston, IL**

- MS in Robotics *Sept 2022- Expected Dec 2023*

  Significant Coursework: Robotic Manipulation, Machine Dynamics, Machine Learning, Embedded Systems in Robotics
  Future: SLAM (in C++), Quadrotors: Design and Control

Manipal University Jaipur **Jaipur, India**

- Bachelor of Technology in Mechatronics Engineering CGPA 9.13/10 *July 2017- June 2021*

  Significant Coursework: Design of Machines Elements, Industrial Robotics, Analog System Design, Digital System Design, Microprocessors and Microcontrollers, Signals and Systems, PLC Lab, Robot Path Planning and Control.

PROJECTS

Solar Electric Car

Team of 20; Reached final round in Electric Solar Vehicle Championship (ESVC) (Asia's biggest Solar Vehicle Event), Performed electrical connections of BLDC motor, solar panels, motor controller, battery. Programming of sensors for obstacle detection and monitor of battery temperature for safety; dashboard, Arduino and Raspberry pi

- 'Data Acquisition System for Solar Electric Vehicles' published in AIP. https://doi.org/10.1063/1.5123931

Heart Attack Prediction

Team of 4; Secured third position in Hackathon held in undergrad college. Built ML model to pre-warn user with probability of Heart-attack based on sleep pattern.

Outdoor Autonomous Trash Collecting Robot

Team of 2. Rocker Bogie Mechanism. Built and compared Object detection models using transfer learning. Programmed motors, sensors, motor drivers, Arduino, and Raspberry Pi

- Published in MDPI Journal: "OATCR: Outdoor Autonomous Trash Collecting Robot Design using YOLOv4-tiny" https://www.mdpi.com/2079-9292/10/18/2292

Pen grab

Implemented control of PincherX 100 4-DOF robot arm and image-processing like image thresholding and finding contours on the feed from intel RealSense D435i camera to track a purple pen and grab it.

Franka Robot

Currently working on implementing control of Franka Panda Robot 7-DOF robot arm by using a custom api to plan and execute actions like picking up a lightsaber and knock over enemies represented by blocks which are tracked by intel RealSense camera.

EXPERIENCE

Piltover Technologies Pvt. Ltd. **Jaipur, India**

Technical Intern *Sept 2019 - Dec 2020*

- Developed Time series data pre-processing code and implemented Deep learning and ML models
- Encoder, semg sensor and motor programming in C, C++ and Worked on technologies like STM32 blue pill, STM CUBEMX, Keil uVision, TrueStudio

JPMorgan **Pune, India**

Virtual Internship Experience (Remote) *June 2020*

- Analyzed financial data for data-visualization using Perspective. Developed a general web application using python, git, react, typescript to establish data feeds

KPMG **Pune, India**

Virtual Internship Experience (Remote) *June 2020*

- Created analytical dashboards using Tableau to obtain data insights and for technical communication

National University of Singapore **Singapore, Singapore**

Intern (Remote) *June 2021 - Sept 2021*

- Implemented SSD-MobileNet for Pedestrian detection and LSTM for Sales Forecasting on timeseries data
- Cloud computing and deployment on cloud as webapp using flask

Artenal **Vancouver, Canada**

Computer Vision Intern (Remote) *Feb 2022 - June 2022*

- Built and custom trained SSD VGG Deep Learning algorithm for garbage sorting for solid waste management.
- Performed Polygon Image Labelling and built MaskRCNN Deep Learning model for depth estimation of veneer wood using depth cameras. Image extraction from bag files. Developed the code for object distance estimation and object detection and classification from YOLOv5, using intel realsense api.
- Developed the flutter frontend for the palletizing desktop App. Built the 3D bin packing backend code using Python.

SKILLS

Software: Python, C, Machine Learning, Deep Learning, Computer Vision and OpenCV, Git, bash, MATLAB, Creo and SolidWorks.
Robotics: ROS2/ROS, Gazebo, Rviz, MoveIt, Modern Robotics, CoppeliaSim