Darsh Shah

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Education

Arizona State University — Tempe, AZ
MS in Robotics and Autonomous Systems, ***CGPA - 4.22*** — *Aug 2021 - Dec 2022*

Institute of Infrastructure Technology Research and Management — Ahmedabad, Gujarat
B.Tech in Mechanical Engineering — *Aug 2017 - May 2021*

Technical Skills

Languages: Python, MATLAB, C, C++, Visual Studio, R
Libraries and Tools: TensorFlow, Keras, Numpy, Matplotlib, OpenCV, Google Colab, Pycharm, ROS
Design: Siemens NX, Solidworks, AutoCAD
Hardware: Arduino, 3D printer, Raspberry Pi

Professional Experience

Polycab India Limited — Gujarat, India
Mechanical Engineering Intern — *May 2019 - June 2019*

- Assessed manufacturing process sequence and tooling functions to minimize the risk of reworking and scrap rate; provided regular, metric-based project updates to the management team.
- Optimized production process and equipment to ensure safety, quality, cost, timing; lessened 10% production time and supported maintenance team in troubleshooting breakdowns for all automation systems.
- Assisted in root cause identification of failures and carried out prototype development into full production; worked collaboratively with cross-functional teams and executed production line trials.

Ball Aerosol Packaging India Private Limited — Gujarat, India
Mechanical Engineering Intern — *May 2018 - July 2018*

- Led a team of 3 interns to design, model, fabricate, assemble manual and semi-automated tool fixtures and support equipment for use in manufacturing process; reduced manufacturing cost by 25%.
- Performed 10+ quality tests on products to assist quality control engineers; collaborated with production team to design Parts in AutoCAD that can be printed using 3D printers.
- Conducted drawing analysis of robotics process using theoretical knowledge of kinematics, dynamics, control and mechanical design; applied lean manufacturing and 5S initiative.

Arizona State University — Arizona, US
Graduate Service Assistance — *Aug 2021 - Present*

- Teaching Assistant for 80 - 100 undergraduate engineering students in Manufacturing Process (MEE 351) and Mech. particles/Rigid Bodies 1 (MAE 201).

Projects

Classical and Deep Learning method to count vehicles — Aug 2021 - Dec 2021

- Implemented a background subtraction method and a pre-trained YOLOv3 model to detect vehicles.
- Compared both method and CAMshift to track vehicles; achieved 82% accuracy and 60% accuracy in YOLOv3 and background subtraction method respectively.

Transfer learning to Monkey Breed Classifier — Jan 2021 - May 2021

- Modified a pre-trained dog breed classifier model with a 48 layer convolutional neural network in Keras, trained on the monkey dataset, which has over 1300 images of monkeys.
- Streamlined the pre-trained model towards predicting monkey breed using Transfer Learning; achieved classification accuracy of 93%.

Pick and Place Robotic Arm — Aug 2020 - May 2021

- Designed in NX-CAD and 3D printed 3 Dof industrial robotics arm with gear and pulley using Repetier-Host software; decreased total weight of robot by 20%.
- Applied NX-CAD and Repetier-Host software for designing and 3d Printing of Robotics arm, respectively; implemented YOLO algorithm to identify different objects.