Sharath Jotawar

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Address: Blk 110, Jurong East, Singapore.
Visa Status: On Employment Pass
Nationality: Indian

Professional Summary

- 11+ years of software development experience in C++, Python.
- Specialized in the development of algorithms on image processing, computer vision, machine learning, deep learning with master's degree in Signal Processing.

Skill Sets

- **Programming Languages:** C, C++, Python, HTML, CSS, JavaScript
- **Technical Skills:** OOP concepts, multi-threading, data structures and algorithms.
- **Software Libraries:** OpenCV, PCL, Keras, Tensorflow, numpy, matplotlib, pandas, ROS, MoveIt, FlexBe, Gazebo
- **Operating System:** Linux Ubuntu, Windows
- **Version Control Systems:** Git

Experience

Rapsodo Pte Ltd, Singapore as Staff Computer Vision Engineer **Dec '20 to Present**

- Development of software for stereo/multi camera-based system for analysis of baseball trajectory.
- Responsible for development of algorithms for multi camera calibration (extrinsic and intrinsic), radar data processing, sensor data fusion, object detection and tracking using computer vision algorithms.
- Worked on development of product: **Pro2.0 for Baseball and Softball**

Transforma Robotics Pte Ltd, Singapore as Software Engineer **Mar '18 to Dec '20**

- Semantic segmentation and detection in an indoor environment using Mask R-CNN deep learning model to segment out objects present on wall. Made use of ResNet as base network for extraction of CNN features.
- Development of software for robot arm motion planner and high-level task planner for complex behavior of autonomous painting robot, human machine interface through WebApp Video.

Tata Consultancy Services Innovation Labs, Bangalore, India as Researcher **Aug '14 to Mar '18**

- Real time object detection in a cluttered environment using Faster R-CNN deep learning model Video.
- Primitive shapes-based object model matching using SUPER4PCS for estimation of grasp pose Video.
- Localization of grasp regions on novel objects through 3D geometric surface fitting Video.

Continental Automotive Components India Pvt Ltd as Graduate Engineer Trainee **Aug '10 to May '11**
Responsibilities: Conducting verification of circuit design of different modules in prototype Engine Control Unit.

Personal Projects

- CNN model for classification of 43 German traffic signs. Got test data classification accuracy of 97% **Link**
- CNN model to predict steering angles using dashboard camera images on a simulated autonomous car **Link**
- Model for multi-label tagging of fashion products trained through transfer learning on VGG16 model using an imbalanced training dataset. Achieved train data F2 score: 0.71, test data F2 score: 0.66. Github Project Link.

Achievements & Publications

- Member of Team IITK-TCS which participated in **Amazon Robotics Challenge**, held in RoboCup 2017, Nagoya, Japan. Won 3rd place in pick task and 4th place in the final round out of 16 teams in the competition.
- **Paper:** Design and development of an automated robotic pick & stow system for an e-commerce warehouse.
- **Paper:** Methods for improving performance of robotic pick and place system for ARC 2017
- **Paper:** Motion planning for an automated pick and place robot in a retail warehouse.

Academic Background

M Tech. in Electronics & Electrical Engineering with Specialization in Signal Processing **Institute: Indian Institute of Technology Guwahati (IIT Guwahati), India** **Master's Thesis Title:** Improving Sparse Representation using NN-LASSO for Robust Automatic Speech Recognition. Implemented using GMM-HMM based HTK tool kit.	Yr: 2012-14 CPI: 8.34
B.E. in Electronics & Communication Engineering **Institute: BMS College of Engineering, Bangalore, India.**	Yr: 2006-10 Avg: 71.9 %