


# Shubham Shah

 shubhamshah10

 shubham-shahh

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## EDUCATION

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- **Mukesh Patel School of Technology Management and Engineering** Mumbai, Maharashtra  
*Bachelor of Technology in Mechatronics; CGPA: 2.77/4* June. 2016 – May. 2020
- **Kishinchand Chellaram College** Churchgate, Mumbai  
*Higher Secondary Certificate Examination Class XII; Percentage: 65.85%* June. 2014 – May. 2016
- **The Blossoms Sunderbai Thackersey English High School** Marine lines, Mumbai  
*Secondary School Certificate Examination Class X; Percentage: 88.20%* June. 2013 – May. 2014

## EXPERIENCE

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- **Om Siddh Vinayak Impex Pvt Ltd** Gandhidham, Gujarat  
*Product Developer* July 2020
  - **Computer vision on edge devices:** Building computer vision-based products deployed on edge devices such as Raspberry Pi, Jetson Nano, ESP32 etc.
  - **Projects:** Worked on projects such as Face Recognition, Automatic Number Plate Recognition, Smart Switch, Smart collection box, Vision-based automatic laser cutting machine, Smart street lights. Actively involved in building all the projects mentioned above right from designing, building the pipeline to deployment and also contributed and collaborated in several open-source projects.
  - **Technologies used:** C, C++, Python, Raspberry Pi, Jetson Nano, OpenCV, Nvidia's Deepstream SDK, Darknet, Tensorflow, Keras, TensorRT, Pytorch, ONNX, SQLite, Gstreamer, different types of IoT sensors, LORA, MQTT, Dlib, Git, Object classification, detection, segmentation models, OCR
- **Edureka** Bengaluru, Karnataka  
*Programming Content Creator Intern* July 2019 - Oct 2019
  - **Algorithms and Data Structures:** Created more than 40 programming articles related to algorithms, data structures and other essential programming concepts such as Heap sort, Merge sort, Priority queue, Event Handling in Java, etc. All the concepts mentioned above are explained and demonstrated in languages such as C, C++, and Java. More than 70% of the articles are ranked among top 10 search results by Google
  - **Link to the articles:** Heap Sort, Merge Sort, Default value of char, Priority Queue
- **RoboVR** Marine lines, Mumbai  
*Robotics and Embedded Systems Intern* June 2019 - July 2019
  - **Sports Robots:** worked in a team with 6 interns from different Engineering branches, designed and built 15 different types of robots (Wirelessly controlled) capable of playing 15 different types of sports such as badminton, fencing, cricket, basketball, archery, golf, etc.
  - **Technologies used:** FDM 3D printer, Arduino (all models), DC motors, Servo motors, Motor drivers, (Li-ion, Li-Po, Lead-acid) battery packs, Bluetooth module, Sensors.
- **Light Information Systems** Pune, Maharashtra  
*Machine Learning Intern* May 2019 - June 2019
  - **Machine Learning and Deep Learning:** Created Machine learning and deep learning models to solve real world challenges. Developed a deep understanding of Supervised and Unsupervised Machine Learning, Image Recognition systems, Recommendation systems, transfer learning and NLP.
  - **Projects:** During the period of Internship completed 2 major projects, the first one was 'Sign language classification' it has an accuracy of 96% and is made to help differently-abled people. The other one is the Movie Recommendation engine which has an accuracy of 94%.
  - **Technologies used:** OpenCV, MobileNet, VGG-16, RNN, CNN, Tensorflow, Pytorch, Keras, Python, Pandas, Numpy, CountVectorizer and Cosine Similarity scores, Regression, SVM, Decision trees, K- Nearest neighbors, PCA.

## PROJECTS

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- **Versatile Robotic Arm** July 2019 - Mar 2020  
*Apps- Material handling in Micro, Small and medium scale industries, Segregation, Hydroponics*
  - **Description:** Designed a 5 Degree of freedom Robotic arm in Fusion 360. The design is inspired by Kuka KR 360 FORTEC series of robotic arms. After designing, 3D printed and assembled all the designed parts. The arm uses Servo motors for precision and high torque capability. The arm is mounted on a car with mecanum wheels for extreme maneuverability and mobility in congested environments. Designed a mobile app to control the whole system with ease and precision. The arm can store all the required positions of the servo motors and the mecanum wheels for an automated operation.
  - **Technologies used:** Technologies Used - High Torque and Low Torque Servo motors, stepper motors, OpenCV, Arduino, 3D Printer, Li-Po battery pack.
- **Sign Language Identification** July 2019  
*Apps - Help differently-abled people in communication*
  - **Description:** Processed a custom dataset of 7000 images of hand signs (24 Characters) to train a custom convolutional neural network made for identifying hand signs. After training, with the help of OpenCV, the model was able to predict the hand signs in real time with 96% accuracy.
  - **Technologies used:** Raspberry Pi 3B+, TensorFlow, Convolutional neural network.

## PROGRAMMING SKILLS

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- **Languages:** C, C++, Python
- **DL Frameworks:** Darknet, TensorFlow, Pytorch, Keras, TensorRT, TensorFlow Lite, ONNX CUDA
- **Microcontrollers:** Jetson (family), RaspberryPi(family), SiPeed (family), ESP32
- **SLAM:** FastSLAM, GraphSLAM
- **Algorithms (Localisation):** Kalman Filter, Extended Kalman Filter, Monte Carlo Localisation(MCL)
- **Object Detection Algorithms:** YOLO, MobileNet, Faster RCNN, EfficientDet
- **Object Segmentation Algorithms:** Mask RCNN, YOLACT++, U-Net
- **Sensors:** GPS, IMU, Load cells, Lidars, LORA, Radar
- **Simulation tools:** Gazebo
- **Robotics:** SLAM, ROS, ROS2, OpenCV
- **Path Planning:** A\*, Dijkstra's algorithm
- **Operating Systems** Windows, Ubuntu

## AREAS OF INTEREST

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- **Technical:** Tinkering with Android devices, make hobby projects    **Hobbies:** Swimming, Trekking, Reading