Shubham Jain

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OBJECTIVE - To work as a summer intern in the field of Machine Vision and Robotics.

EDUCATION

Worcester Polytechnic Institute (WPI)
August, 2017 - Present

Master of Science in Robotics Engineering

Indian Institute of Technology Kanpur (IITK), India
July, 2013 - July 2017

Bachelor of Technology in Chemical Engineering *GPA: 8.0/10*
Minor: Artificial Intelligence

TECHNICAL STRENGTHS

Computer Languages	Python, C++, MATLAB, C, Java, HTML5, MySQL, javascript, php
Software & Libraries	OpenCV, Caffe, Theano, tensorflow, ROS, Arduino, LaTeX
Relevant Courses	Deep Learning, Machine Learning, Computer Vision, Data Structures & Algorithms
	Artificial Intelligence, Probabilistic Mobile Robotics, Robot Motion Planning

INTERNSHIPS

Quikr India Pvt Ltd — Data Scientist Intern
May, 2016 - July, 2016

· Developed an adaptive AutoSuggest and content-aware spell check using Python that worked in real time.
· Implemented a Text Based Clustering Algorithm to find Trending Topics using millions of user search queries.

Adoro India Pvt Ltd — Computer Vision Intern
May, 2015 - July, 2015

· Created a Visual Search Engine in C++ that classified types of clothing and suggested similar products.
· Trained machine learning models using features like HoG, SIFT and MR8 with accuracy of up to 60%.

ACADEMIC PROJECTS

Lane Detection and Localisation - IITK
July, 2016 - April, 2017

· Proposed and implemented a modified Hough Line Transform to detect lanes with greater speed and accuracy.
· Fused LiDAR and camera data to efficiently detect obstacles using Watershed and GrabCut algorithm.
· Created global occupancy map of lanes and obstacles using data from IMUs and LiDAR scan alignment.

Video Captioning using Deep Learning - IITK
July, 2016 - December, 2016

· Trained Sequence to Sequence-Video to Text(s2vt) and Deep Compositional Captioning (DCC) models in Caffe.
· Modified above models to combine them and incorporate audio features to go beyond state-of-the-art.

Pedestrian Simulation and Tracking - IITK
January, 2016 - December, 2016

· Automated pedestrian detection and tracking using SIFT features and CamShift algorithm in MATLAB.
· Created a simulation engine in C++ for crowd flow estimation and used it to analyze interaction force parameters.

ABU ROBOCON PROJECTS - ASIA PACIFIC ROBOTICS CONTEST

Green Energy Recharging the world
August, 2015 - March, 2016

· Developed a novel line following algorithm for an autonomous bot driven along a zig-zag path using wind energy.
· Implemented a wall following algorithm using ultrasonic sensors and Arduino microprocessor for PID control.
· Second Runners Up among over a hundred teams from engineering colleges all over India.

Robominton
August, 2014 - March, 2015

· Designed and fabricated two Badminton Playing Robots capable of playing on a full sized badminton court.
· Used blob detection and optical flow for shuttle localization and extended Kalman filter for trajectory prediction.
· Could accurately predict shuttle trajectory and its destination in real time with an error margin of just 5-7 cm.