Shubham Jain

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OBJECTIVE - Looking for full time opportunities in the field of Computer Vision and Robotics.

EDUCATION

Worcester Polytechnic Institute (WPI) Aug, 2017 - Present
Master of Science in Robotics Engineering *GPA: 4.0/4.0*

Indian Institute of Technology Kanpur (IITK), India Jul, 2013 - Jul 2017
Bachelor of Technology with minor in Artificial Intelligence *GPA: 8.0/10*

TECHNICAL STRENGTHS

Computer Languages	Python, C++, MATLAB, C, Java, HTML5, MySQL, javascript, php
Software & Libraries	OpenCV, Point Cloud Library (PCL), ROS, Caffe, Theano, Arduino, LaTeX
Relevant Courses	Machine Learning, Computer Vision, Swarm Intelligence, Motion Planning, Deep Learning, Probabilistic Mobile Robotics, Data Structures & Algorithms

WORK EXPERIENCE

Diabetic Foot Wound Analyis - Research Assistant, WPI Jan, 2018 - present

- Developing a wound image analysis algorithm capable of detecting and calculating healing score of wounds.
- Used Associative Hierarchical Random Fields to obtain 75% segmentation accuracy and now exploring CNNs.

Amazon Robotics — Advanced Robotics Intern May, 2018 - Aug, 2018

- Built a working setup for automated detection and filling of missing data in point clouds using movable sensors.
- Worked with OpenCV, PCL, ROS for motion planning of robotic arms and sensor fusion(cameras, 3D sensors).

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

Teaching Teleoperated Surgery - WPI Jan, 2018 - Apr, 2018

- Demonstrated two way force feedback and shadowing between master of DaVinci Surgical System and Laprotek
- Calculated inverse kinematics of DaVinci master, used ROS for communication, PD controller for force feedback

Autonomous steering using CNN - WPI Jul, 2017 - Dec, 2017

- Used Convolutional Neural Networks to map raw image data to steering angles for autonomous lane-following.
- Successfully trained a 5-layer CNN using real-world data in Theano for driving a car in Udacity simulator.

Video Captioning using Deep Learning - IITK Jul, 2016 - Dec, 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.

ABU ROBOCON PROJECTS - ASIA PACIFIC ROBOTICS CONTEST

Green Energy Recharging the world Aug, 2015 - Mar, 2016

- Developed a novel line following algorithm for an autonomous bot driven along a zig-zag path using wind energy.
- Second Runners Up among over a hundred teams from engineering colleges all over India.

Robominton Aug, 2014 - Mar, 2015

- Automated badminton playing robots using OpenCV for shuttle detection 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.