

# SAHIL B SHAH

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EDUCATION	<b>Carnegie Mellon University, Pittsburgh, USA</b> Robotics Institute- MS in Robotic Systems Development <i>James R. Swartz Entrepreneurial Fellow</i>	December '15 GPA: 3.86
	<b>Birla Institute of Technology &amp; Science, Pilani, India</b> Bachelor of Engineering (Hons.) Computer Science <i>Undergraduate Thesis: Pulse rate estimation from facial videos</i>	December '12 First Division
EXPERIENCE	<b>Computer Vision Intern @ Canary Connect Inc, New York, USA</b> <i>Canary is a complete security system packed into a single device you control from your phone</i> Image Registration; Object detection <ul style="list-style-type: none"><li>Implemented a system to automatically realign regions from one view of the camera to the other</li><li>Researched, developed and tested several algorithms for object detection</li></ul> <i>Tech: Multiview Camera Geometry, Convolution Neural Networks, OpenCV, Torch</i>	May '15 – Aug '15
	<b>Technical Staff (employee #15) @ Tonbo Imaging, Bangalore, India</b> <i>Tonbo Imaging designs, builds and deploys advanced imaging and sensor systems</i> Video Stabilization (video: <a href="https://vimeo.com/sahilshah/imu-video-stab-2">vimeo.com/sahilshah/imu-video-stab-2</a> ) <ul style="list-style-type: none"><li>Implemented real time image stabilization using an IMU (accelerometer and gyroscope)</li><li>Doubled the frame rate over previous methods</li><li>Prototyped the entire system on TI DM6467 microprocessor and Invensense IMU</li></ul> <i>Tech: C++, Multiview Camera Geometry, Kalman filters, sensor fusion, Qt, Embedded Programming</i>	Jul '13 - May '14
	<b>Research Intern @ Neuroinformatics &amp; Cognitive Robotics Lab, TU Ilmenau, Ilmenau, Germany</b> Pulse Rate Estimation from Facial Video (deck: <a href="https://slideshare.net/sahilshah15/pulse-detector">slideshare.net/sahilshah15/pulse-detector</a> ) <ul style="list-style-type: none"><li>Implemented a system to estimate the pulse rate of a person using facial videos in real time</li><li>Deployed on a robot that assisted residents at home for the aged</li></ul> <i>Tech: C++, Independent Component Analysis, Fast Fourier Transforms, Face Detection</i>	Sep '12 - Nov '12
	<b>Summer Analyst @ Goldman Sachs &amp; Co., Bangalore, India</b> Apache Solr <ul style="list-style-type: none"><li>Customized Apache Solr features to make more effective queries on 7M+ XML records database</li><li>Reduced the steps required to analyze suspicious transactions by a factor of 2</li></ul> <i>Tech: Java, Information Retrieval, tf*idf algorithm, similarity metrics</i>	May '12 - Jul '12
PROJECTS	<b>Autonomous Quadcopter Docking &amp; Charging System</b> Using computer vision and GPS guidance, enable a UAV to land on a docking station with wireless charging capabilities for autonomous drone operation (video: <a href="https://vimeo.com/128076716">https://vimeo.com/128076716</a> )	Aug '14 - May '15
	<b>Artificial Intelligence &amp; Machine Learning Techniques</b> Implemented Simulated Annealing, ID3 Decision Tree Learning, K means clustering, etc.	Jan '12 - May '12
RELEVANT COURSEWORK	Computer Vision; Machine Learning; Robot Autonomy; Visual Learning & Recognition; Artificial Intelligence; Geometry Methods in Computer Vision; Data Structures & Algorithms; Operating Systems;	
SKILLS	<b>Languages:</b> C, C++, Java, MATLAB, Python, Ruby, Javascript, HTML/CSS <b>Frameworks &amp; Tools:</b> MATLAB, Android Apps, Unix Utilities, Rails, Heroku, OpenCV, Torch, ROS	