

Mayank Kumar

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Objective	To be a leader in technology which touches human lives	
Education	PhD candidate, Electrical Engineering, Rice University	2014 - Present
	<i>Advised by Dr. Ashutosh Sabharwal</i>	
	MS in Electrical Engineering, Rice University	Aug, 2014
	<i>GPA 4.04/4.00</i>	
Scholastic Achievements	B.Tech in Electrical Engineering, IIT, Delhi	May, 2010
	<i>GPA 8.96/10.00, Department Rank 3</i>	
	Texas Instrument distinguished graduate fellow (2012-Present)	
	Audience Choice Award in the RICE 90 second Thesis Competition 2014	
Graduate Research	Best Graduate Student Poster, RICE ECE Affiliates Day 2014	
	NASA Space Health Challenge 2014 (2nd Prize)	
	Best B.Tech Project Award in IIT Delhi, 2010	
	Yahoo HackU Award, 2009 by Yahoo R&D	
Publications and Patent	Indian National Physics Olympiad, 2006	
	MS Thesis Robust estimations of Photoplethysmograms using a camera	Fall 2013, Spring 2014
	<ul style="list-style-type: none">Developed new algorithm (distancePPG) for monitoring vital sign (pulse rate, pulse rate variability, breathing rate) using a person's videoImproved performance of current known method to make it work for all skin tones, under varied lighting conditions and in natural motion scenarios	
	[J1] Mayank Kumar, Ashok Veeraraghavan, Ashu Sabharwal, Robust estimation of Photoplethysmograms using a camera (<i>manuscript to be submitted to Biomedical Optics Express</i>)	
Publications and Patent	[C1] M. Chowdhary, CSR Technology, USA; M. Sharma, A. Kumar, IIT, India; S. Dayal, CSR Technology, India; M. Kumar, IIT, India. Robust Attitude Estimation for Indoor Pedestrian Navigation using MEMS Sensors. ION GNSS 2012	
	[C2] Dhruv Jain, Himanshu Gupta, Deeksha Gautam, Mayank Kumar, Vinay Ribeiro, Manish Sharma. Whitespace Network for Vehicular Communication. COMSNETS 2013	
	[P1] A system and apparatus for Auditory Evoked Potential (AEP) data acquisition for hearing screening (2011 India Patent)	

Experience	Teaching Assistant , Rice University, ECE Dept. Fall 2014 <ul style="list-style-type: none"> Conduct weekly concept review sessions for ELEC-241, Fundamental of Electric Engineering
	Corporate R&D Intern , Qualcomm, San Diego, CA Summer 2013 <ul style="list-style-type: none"> Developed new algorithm for non-linear interference cancellation (NLIC) in 4G communication systems. Proposed and implemented new ideas to reduce convergence time and implementation cost of developed algorithm
	Algorithm Consultant , Stanford India Bio-design, AIIMS New Delhi Fall 2011 <ul style="list-style-type: none"> Devised novel algorithm for detecting weak (100 nV) Auditory Brainstem Response (ABR) signal in presence of 30 dB high EM noise Patented the algorithm (and prototype) (India Patent)
	Engineering Consultant , CSR plc, Noida, Spring 2011 <ul style="list-style-type: none"> Developed error model using Extended Kalman filter (EKF) for a mobile phone based pedestrian navigation system Benchmarked performance of navigation algorithm and suggested scope of improvements
	Engineering Trainee , Texas Instruments, Bangalore Summer 2009 <ul style="list-style-type: none"> Developed an application to measure performance of GPS receivers during field trials in absence of ground truth data
Leadership Experience	Co-founder , Yantrr Electronic Systems (YES) Pvt. Ltd. 2010-Present <ul style="list-style-type: none"> Developed the cloud architecture for Yantrr M2M device cloud Shaped the strategy for YES to be a leader in Industrial machine-to-machine communications
Technical Skills	Programming Language: Python, MATLAB, C, VHDL Software Libraries: OpenCV (Computer Vision), Scikit Learn (Machine Learning), Theano (deep-learning) Hardware Platform: BeagleBone, C5515 TI DSP, DM365 DaVinci, Xilinx Virtex IV