Curriculum Vitae/Resume

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Brief Introduction:

I am a 4th year B. Tech honors student in Electronics and Communication Engineering (ECE) pursing undergraduate research under Dr. Madhav Krishna at Robotics Research Center (RRC), International Institute of Information Technology (IIIT), Hyderabad, India.

Primary Research Interests:

My primary research interests are autonomous robotic system, simultaneous localization and mapping (SLAM), object parameterization and 3D object reconstruction, machine learning/artificial intelligence in computer vision and regenerating codes for cloud storage.

Education:

Name	Place	Board	Year	Score	Percentile
B. Tech in Electronics and Communication	IIIT Hyderabad, Telangana, India	IIIT deemed University	August, 2014-Present	CGPA: 9.93/10	1st (college)
11-12th Standard (High School)	NPBH, Junagadh, Gujarat	Gujarat Secondary and Higher Secondary Education Board	March, 2014	96%	99.99% (State Level)
10th Standard (High School)	NPBH, Junagadh, Gujarat	Gujarat Secondary and Higher Secondary Education Board	March, 2012	95.2%	99.96% (State Level)

Teaching Assistant Experience: *(at IIIT, Hyderabad, India)*

Course Name	Work	Professor	Duration
Digital Logic and Processors	Conducted Weekly Tutorials	Dr. K Madhav Krishna	August, 2016 – December 2016
Basic Electronics Circuits	Conducted Weekly Tutorials	Dr. Rambabu Kalla	January, 2017 – May, 2017

Other Experience:

Literary club coordinator for semesters monsoon - 2016 and spring - 2017. Successfully organized 12 diverse events/competitions along with bimonthly club meets

.Research Projects and Publication:

1. Constructing Category-Specific Models for Monocular Object-SLAM: *(Under Review – IEEE ICRA 2018)*

- **Faculty**: Dr. Madhav Krishna, Robotics Research Center, IIIT Hyderabad
- **Brief Info:**
  - Proposing new paradigm real time object oriented SLAM with a monocular camera.
  - Showing improvement under various cases where current state of the art monocular SLAM fails.
  - Estimating pose and shape from single monocular image of category specific objects (e.g. chair) using deep learning, unique parameterization and non-linear least square optimization.
- **Video Demo:** https://youtu.be/MvUsxkG3Gsg
- **Paper Link:** https://www.dropbox.com/s/ij1sdi6u7okgmo0/icra2018objectslam.pdf?dl=0

2. Augmented Reality for 3D Room Decor: August 2016 – November 2016

- **Faculty**: Dr. Vineet Gandhi, Centre for Visual Information Technology (CVIT), IIIT Hyderabad
- **Brief Info:** Robust Marker Detection, Extracting Camera Position and Surrounding Information, Apply transformation to 3D object, Gaussian Pyramid blending with the input image. (https://github.com/parvparkhiya/Augmented-Reality-3D-Room-Decore/blob/master/Final_Report.pdf)

3. Regenerating Codes for minimum repair bandwidth:

- **Faculty**: Dr. Lalitha Vadlamani, Signal Processing and Communication Research Center, IIIT Hyderabad
- **Brief Info:** Incremental research on MDS regenerating codes with near optimum repair bandwidth in a distributed cloud storage system.

Other Interesting Projects:

- Lane Detection module (using RANSAC particle filer and image processing) for autonomous car project
- Simple '*Hardware Level*' Digital Signal Encryption (Public-Private Key)
- Doubly Convolutional Neural Network (DCNN) implementation (https://github.com/parvparkhiya/Doubly-Convolutional-Neural-Network)
- Video Game: "Akbar-Birbal and the mystery of unaltered dream" top down narrative driven puzzle game with branching story line and multiple endings. dealing elements like morality and honesty.

Skills:

Extensive experience in C, C++ (especially libraries like OpenCV, Ceres Solver, GTSAM), python (Tensor Flow), Matlab, Git, Multisim (electronics circuit simulation), Layout Design of electronics circuit (Cadence Design Suit), microcontrollers (Arduino, AVR), quadcopters (Bebop and AR drones) and Robotics Operating System (ROS).

Languages:

English, Hindi, Gujarati(Native)

Achievements:

- Part of Dean's list in all 6 semesters till present. (Top 5%)
- Joint Entrance Exam (JEE) Main – 2014: All India Rank – 325 out of 1,400,000 students

Other Interests:

Storytelling in any and all form like books, movies, video games, podcasts and everything in between.