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INTERESTS
Computer Vision, Machine Learning, Deep Learning, Robotics.

EDUCATION

Georgia Institute of Technology   **Aug 2016 - May 2018**
Masters of Science in Electrical and Computer Engineering. (Computational Perception and Robotics)
Relevant Coursework: Computer Vision, Advanced Computer Vision, Statistical Techniques for Robotics, Statistical Machine Learning, Linear Systems and Controls, Data Structures and Algorithms.

Dwarkadas J. Sanghvi College of Engineering, University of Mumbai, India   **Aug 2009 - June 2013**
Bachelor of Electronics and Telecommunication Engineering.

WORK EXPERIENCE

Udelv Inc *[Computer Vision Engineer]*   **June 2018 - Present**
- 3D Reconstruction, SFM for Semantic Scene Understanding, Multi-Object tracking.
- Visual Inertial Odometry and Visual SLAM for navigation in unstructured environment.

Tesla Motors, Palo Alto, USA *[Autopilot Intern – Vision]*   **August 2017 – Dec 2017**
- Prototyping Convolutional Neural networks for Object Detection and Tracking.
- Lane detection using Probability score map, Road surface estimation using geometric vision techniques.

Fork Media, Mumbai, India *[Computer Vision Engineer]*   **March 2015 –June 2016**
- Developed Face Recognition using Principal Component Analysis & Eigen Faces to recognize famous personalities.
- Active Shape and Active Appearance Model for facial landmark localization and SVM, Logistic Regression for predicting facial emotions using these landmark points.

Tata Consultancy Services Ltd, Mumbai, India *[Software Developer]*   **Aug 2013 – Feb 2015**
- Logic Development for functionalities to be implemented on Electronic Control Unit (ECU) for automobiles.
- Automation of generation of Unit test plant (UTP) for testing of functionalities under different conditions.

Indian Institute of Technology, Bombay *[Research Assistant: intern]*   **May 2012 – Aug 2012**
- Worked under guidance the of Dr. Asim Tiwari on measurement of 2D and 3D changes in images. The project developed was used to calculate deformation, vibration and strain on materials using digital image co-relation. This information was used to mathematically model the structures and study material's response and behaviour.

TECHNICAL SKILLS
- Programming languages: C, C++, Java, Python, Matlab
- Libraries: Caffe, TensorFlow, OpenCV, libSVM, NumPy, Keras, Git.
- Operating System: Linux, Windows.

PROJECTS

Planning and Control of robot in perception space   **Aug 2016 – May 2018**
The primary focus of the research project is to find an alternative method for planning the trajectory which will enable us to remove intermediate steps of processing that are involved in traditional methods of planning.

Vision based regrasping for better object utility   **Feb 2017 - August 2017**
To give robots the ability to learn from exploartion using reinforcement learning and/or learning from demonstration. To leverage human demonstrations of how and where to grasp object to help them best execute a task, instead of simply grasping for grasping's sake

SceneFlow using deep learning   **Nov 2016 – August 2017**
Scene flow is the dense 3D motion field of a scene and is 3D equivalent of optical flow. Developing a technique that will aid autonomous navigation and/or manipulation in dynamic environments where motion of objects needs to be predicted.

Navigation aid for blind   **July 2012 – May 2013**
Purpose of the project was to aid safe mobility for vision impaired. Used concepts of vanishing points to find the orientation of user and localize the user in the environment. Successfully developed algorithms to detect humans and static objects, estimating the distance of known obstacles while optimizing the memory requirements.

Video Sudoku solver using MATLAB   **Feb 2012 – May 2012**
It detects Sudoku in an image, interprets it and solves it. Artificial Neural Networks were trained for number recognition. The back propagation algorithm was used to solve the Sudoko.

Signature Verification   **Sep 2011 – Mar 2012**
Project aimed at providing authentication using signatures of user. Efficiently implemented image processing techniques to extract parameters of signature. Invalid signatures were successfully detected enabling secured authentication.

HONORS AND AWARDS
- Recipient of the 'Star of the Learner's Group' award for performances at the Initial Learning Program of TCS Ltd.
- Awarded 3rd prize for 'Signature Verification' project and Technical paper in State level technical exhibition.
- Technical Head of student chapter 'Institute for Electronics and Telecommunication Engineers' in sophomore year.
- Conducted workshops on 'Ball following Robot', 'Digital Image Processing' and 'Solve a Rubix Cube'.