


AKSHAY RANGESH

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SUMMARY

I am a Ph.D. candidate with expertise in applied Computer Vision and Machine Learning, specifically in the context of Autonomous Driving and Driver Safety.

EDUCATION

- **University of California, San Diego (UCSD)**
Ph.D. in Electrical and Computer Engineering Jul 2016 – present
M.S. in Electrical and Computer Engineering, GPA 3.84/4.00 Sep 2014 – Jun 2016
- **National Institute of Technology, Silchar, India (NITS)**
B.Tech. in Electronics and Communication Engineering, GPA 8.72/10.00 Jul 2010 – Jun 2014

EXPERIENCE

- **Researcher, Laboratory for Intelligent & Safe Automobiles (LISA), UC San Diego, CA** Jul 2015 – Present
- **Research Assistant, Indian Institute of Technology, Guwahati, India** Summer, 2013

PUBLICATIONS (SELECTED)

- **Ground Plane Polling for Localization & 6DoF Pose Estimation of Objects on the Road**
Akshay Rangesh and Mohan M. Trivedi in arXiv, 2018.
- **HandyNet: A One-stop Solution to Detect, Segment, Localize & Analyze Driver Hands**
Akshay Rangesh and Mohan M. Trivedi in 3D Humans Workshop, CVPR, 2018.
- **No Blind Spots: Full-Surround Multi-Object Tracking for Autonomous Vehicles using Cameras & LiDARs**
Akshay Rangesh and Mohan M. Trivedi in IEEE Transactions on Intelligent Vehicles, 2018.
- **How would surround vehicles move? A Unified Framework for Maneuver Classification and Motion Prediction**
Nachiket Deo, Akshay Rangesh and Mohan M. Trivedi in IEEE Transactions on Intelligent Vehicles, 2018.
- **Driver Gaze Zone Estimation using Convolutional Neural Networks: A General Framework and Ablative Analysis**
Sourabh Vora, Akshay Rangesh and Mohan M. Trivedi in IEEE Transactions on Intelligent Vehicles, 2018.
- **Pedestrians and their Phones - Detecting Phone-based Activities of Pedestrians for Autonomous Vehicles**
Akshay Rangesh, Eshed Ohn-Bar, Kevan Yuen and Mohan M. Trivedi in IEEE ITSC, 2016.

TESTBED DESIGN, CALIBRATION & DEPLOYMENT

- **LISA-T** 2018
 - Tesla Model S platform
 - 11 GoPro Hero 4 Blacks, 1 Kinect v2, 1 Velodyne VLP-16 HiRes LiDAR, 2 VL6180 IR sensors etc.
 - Fully calibrated cameras and LiDAR
 - Associated publication: **Exploring the Situational Awareness of Humans inside Autonomous Vehicles** - Akshay Rangesh, Nachiket Deo et al., IEEE ITSC 2018.

- **LISA-A** 2015
 - Toyota Avalon platform
 - 8 PointGrey Flea3 RGB cameras, 6 iBeo LiDARS, 4 Delphi SRR2 Radars, 1 Mobileye Driver Assistance System etc.
 - Fully calibrated cameras and LiDARS
 - Associated publication: **A Multimodal, Full-Surround Vehicular Testbed for Naturalistic Studies and Benchmarking: Design, Calibration and Deployment** - Akshay Rangesh, Kevan Yuen et al., arXiv 2017.

SKILLS

- **Programming Languages:** C++, Python, MATLAB, Shell
- **Deep Learning Frameworks:** Caffe, TensorFlow, Keras, PyTorch
- **Web Design:** HTML, CSS (novice), JavaScript (novice)
- **Other Skills:** PC speccing & building, Arduino prototyping

TEACHING EXPERIENCE

- Special Topics in Robotics and Control Systems (Spring 2016 & Spring 2018)
- Introduction to Intelligent Systems: Robotics and Machine Intelligence (Winter 2016)
- Digital Image Processing (Fall 2015 & Fall 2016)
- Physics Laboratory: Electricity and Magnetism, Waves and Optic (Spring 2015)

COURSES (SELECTED)

Computer Vision (I & II) ○ Artificial Intelligence ○ Parameter Estimation (I & II)
 Statistical Learning ○ Optimization on Manifolds ○ Mathematics for Robotics
 Data Mining and Predictive Analytics ○ Design and Analysis of Algorithms

AWARDS & HONORS

- Award for academic excellence in B.Tech ECE at NITS (top 5 in a batch of 95 students) 2014
- Best graduating student of the year at O.L.P.S., Mumbai 2010