Siva Karthik Mustikovela

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Website : sivakm.github.io
Google Scholar : bit.ly/gooschol

EDUCATION

Ph.D Student (4^{th} year) *(September 2016 - Present)*
Advisors: Prof. Carsten Rother, Prof. Andreas Geiger (Co-Advisor)
Visual Learning Lab, Heidelberg University, Germany

Integrated Dual Degree (Bachelor of Tech. + Masters in Robotics) *(Aug 2009 - June 2015)*
Advisor: Prof. K Madhava Krishna, Robotics Research Centre
International Institute of Information Technology(IIIT-H), Hyderabad, India
Thesis : Searching for small objects in indoor environments over mobile robots

INTERESTS

Self-supervised learning for computer vision applications.
Realistic data generation for scene understanding.
Controllable image generation, 2D/3D scene understanding.

RESEARCH INTERNSHIPS

NVIDIA Research (Learning and Perception Research) *(June 2020 - Mar 2021)*
Mentors: Shalini De Mello, Jan Kautz
Topic: Self-supervised Object Detection via Generative Image Synthesis

NVIDIA Research (Learning and Perception Research) *(Apr 2019 - Nov 2019)*
Mentors: Varun Jampani, Shalini De Mello, Jan Kautz
Topic: Self-supervised viewpoint learning from image collections

Siemens Research (Machine Learning Research) *(April 2013 - June 2013)*
Mentors: Aayush Rai, Pradeep Gopalakrishnan
Topic: Fetal heart sound analysis using Spiking Neural Networks

National University of Singapore (Acoustics Research Lab) *(April 2012 - June 2012)*
Mentors: Prof. Mandar Chitre
Topic: Long range position estimation and tracking of autonomous underwater vehicles

F&P Robotics, Zurich (Computer Vision Group)
Mentors: Dr. Hansruedi Frueh
Topic: Scene understanding, object tracking and face recognition

PUBLICATIONS LINKS INCLUDED

Self-Supervised Viewpoint Learning Using Image Collections
CVPR 2020
Siva Karthik M, Varun Jampani, Shalini De Mello, Sifei Liu, Umar Iqbal, Carsten Rother, Jan Kautz

Intrinsic Autoencoders for Deferred Neural Rendering and Intrinsic Image Decomposition
3DV 2020
Siva Karthik M*, H Abu Alhaija*, J. Thies, V. Jampani, M. Niessner, A. Geiger, C. Rother

iPose: Instance-Aware 6D Pose Estimation of Partly Occluded Objects
ACCV 2018
Siva Karthik M*, O. H. Jafari*, K. Pertsch, E. Brachmann, C. Rother
(*Equal Contribution)

Bounding Boxes, Segmentations and Object Coordinates: How Important is Recognition for 3D Scene Flow Estimation in Autonomous Driving Scenarios?
ICCV 2017
Siva Karthik M*, A. Behl*, O. H. Jafari*, H. Abu Alhaija, C. Rother, A. Geiger (*Equal Contribution)

Geometric Image Synthesis
ACCV 2018
H. Abu Alhaija, **Siva Karthik M**, A. Geiger, C. Rother

Augmented Reality Meets Computer Vision : Efficient Data Generation for Urban Driving Scenes
IJCV 2018
H. Abu Alhaija, **Siva Karthik M**, L. Mescheder, A. Geiger, C. Rother

Augmented Reality Meets Deep Learning for Car Instance Segmentation in Urban Scenes
BMVC 2017
H. Abu Alhaija, **Siva Karthik M**, L. Mescheder, A. Geiger, C. Rother

Can Ground Truth Label Propagation from Video help Semantic Segmentation?
ECCV 2016 *(Workshop on Video Segmentation)* [Link]
Siva Karthik M, M. Yang, C. Rother

A Hierarchical Network for Diverse Trajectory Proposals
Intelligent Vehicles 2019
Sriram N.N, Gourav K, Abhay S, **Siva Karthik M**, Saket S, Brojeshwar B, Madhava Krishna

During Masters :

Guess from Far, Recognize when Near: Searching the Floor for Small Objects
ICVGIP 2014*, Indian Conf. on Vision Graphics and Image Processing*
M Siva Karthik, S. Mittal, K Madhava Krishna

Markov Random Field based Small Obstacle Discovery over Images
ICRA 2014*, International Conf. on Robotics and Automation*
S. Kumar, **M Siva Karthik**, K Madhava Krishna

Small Object Discovery and Recognition using Actively Guided Robot
ICPR 2014*, International Conf. on Pattern Recognition*
M Siva Karthik, S. Mittal, K Madhava Krishna

Professional Services
Reviewing for conferences: CVPR (20, 19, 17, 16), ECCV (20, 18), ICCV-19, GCPR-18, ICRA-15

Teaching
Computer Vision: Scene Reconstruction and Understanding (Instructor and TA)

Thesis Supervision
Alex Bigalke - Domain Adaptation through Cross-Modal Feature Transfer

Awards
- Rated as an excellent reviewer for CVPR-20.
- Ranked in top 0.8% among 1 million participants in All India Engineering Examination-2009.
- Ranked 13th among Ten Thousand participants in National Mathematics Olympiad 2005-06, India.
- Ranked 22nd at the National Mathematics Olympiad 2007, India.

Technical Skills
- Languages : C++, Python, Matlab
- Operating Systems : Unix/Linux, Windows
- Libraries : PyTorch, Tensorflow, Caffe, OpenCV

References
- Prof. Carsten Rother (carsten.rother@iwr.uni-heidelberg.de) - Heidelberg University, Germany
- Dr. Shalini De Mello (shalinig@nvidia.com) - NVIDIA Research, Santa Clara, USA
- Dr. Varun Jampani (varunjampani@gmail.com) - Google Research, Cambridge, USA
- Prof. Andreas Geiger (andreas.geiger@tuebingen.mpg.de) - Max Plank Institute, Tubingen
- Dr. Jan Kautz (jkautz@nvidia.com) - NVIDIA Research, Santa Clara, USA