

Visesh Chari

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EDUCATION

INRIA Rhone Alpes

PhD, Computer Vision

Montbonnot, France

October 2008 – November 2012

International Institute of Information Technology

MS by Research, Computer Science

B. Tech. (hons.), Computer Science

Hyderabad, India

July 2005 – October 2008

July 2001 – July 2005

PROFESSIONAL EXPERIENCE

Sr. Applied Scientist

August 2018 – Present

Applied Scientist

February 2016 – August 2018

Research Scientist

October 2015 – February 2016

Amazon Lab126

Sunnyvale, California

Amazon Halo *Key member of the Body feature*

- Core member, contributed to designing the deep network architecture deployed in production
- Led 3D data collection and synthetic data generation for training network, reducing the need for real data by several magnitudes and saving costs
- Designed & implemented data generation iterations and loss functions to optimize the model for production
- Lead for a major upcoming 3D computer vision feature

Echo Look *Key member of the background blur feature*

- Worked on computer vision features dealing with noisy depth data, resulting in a robust background subtraction feature that was deployed on device
- Led the work on a feature to persist background information over time, enabling blur customization for each user

Mentorship and Publications

- Mentored two interns and received a commendation from Carnegie Mellon University for mentorship
- Published in CVPR, ECCV, 3DV on 3D reconstruction and 3D human modeling, along with 5 patents, with few more under submission

Visiting Researcher

January 2015 – October 2015

International Institute of Information Technology

Hyderabad, India

- Mentored students for their Masters/PhD thesis in computer vision and robotics
- Published in ICRA, IROS, ECCV on visual slam and 3D reconstruction

Post Doctoral Researcher

September 2012 – December 2014

Willow group, INRIA Paris

Paris, France

- Advisors: Dr. Ivan Laptev, Dr. Josef Sivic, Dr. Simon Lacoste-Julien
- Worked on a novel problem formulation for tracking humans in videos, and formulated the problem as a min-cost network flow optimization.
- Published in CVPR on human tracking in videos.

Research Intern

August 2010 – February 2011

Mitsubishi Electric Research Laboratories (MERL)

Cambridge, MA

- Worked on problems related to 3D modeling from images, and calibration under refractive media.
- Published in ICRA, CVPR on 3D reconstruction and calibration under refractive media

SELECTED PUBLICATIONS

- **Towards Accurate 3D Human Body Reconstruction from Silhouettes** BM Smith, V Chari, A Agrawal, JM Rehg, R Sever *3DV 2019*
- **Learning to Generate Synthetic Data via Compositing** S Tripathi, S Chandra, A Agrawal, A Tyagi, JM Rehg, V Chari *CVPR 2019*
- **A Unified View-Graph Selection Framework for Structure from Motion** R Shah, V Chari, PJ Narayanan *ECCV 2018*
- **Rolling shutter and motion blur removal for depth cameras** S Tourani, S Mittal, A Nagariya, V Chari, KM Krishna *ICRA 2016*
- **Monocular Reconstruction of Vehicles: Combining SLAM with Shape Priors** F Chhaya, D Reddy, S Upadhyay, V Chari, MZ Zia, KM Krishna *ICRA 2016*
- **Face fiducial detection by consensus of exemplars** BR Mallikarjun, V Chari, CV Jawahar, A Asthana *WACV 2016*
- **Dynamic body VSLAM with semantic constraints** D Reddy, P Singhal, V Chari, KM Krishna *IROS 2015*
- **Accurate localization by fusing images and GPS signals** K Vishal, CV Jawahar, V Chari *CVPRW 2015*
- **On pairwise cost for multi-object network flow tracking** V Chari, S Lacoste-Julien, I Laptev, J Sivic *CVPR 2015*
- **A theory of refractive photo-light path triangulation** V Chari, P Sturm *CVPR 2013*
- **A theory of multi-layer flat refractive geometry** A Agrawal, S Ramalingam, Y Taguchi, V Chari *CVPR 2012*
- **Convex bricks: A new primitive for visual hull modeling and reconstruction** V Chari, A Agrawal, Y Taguchi, S Ramalingam *ICRA 2012*
- **Multiple plane tracking using unscented kalman filter** V Chari, CV Jawahar *IROS 2010*
- **Planar scene modeling from quasiconvex subproblems** V Chari, A Nelakanti, C Jakkoju, CV Jawahar *ACCV 2009*
- **Multiple-view geometry of the refractive plane** V Chari, P Sturm *BMVC 2009*

PATENTS

- Segmentation of object image data from background image data. US Patent 10,198,823
- Segmentation of object image data from background image data. US Patent 10,096,122
- Image data segmentation using depth data. US Patent 9,965,865
- Task Aware Synthetic Data Generation by inserting 3D Avatars in Real World Images & Videos
- Synthetic Data Generation to Fill Gaps in Data Distribution

INTERNS SUPERVISED

- **Shashank Tripathi, CMU MS** 2018 Summer
- **Sohil Savla, CMU MS (co-supervised)** 2019 Summer
- **Rawal Khirodkar, CMU PhD** 2020 Summer

REVIEWER

- CVPR (2012-2021) (2020 Outstanding Reviewer Award), ECCV (2016-2020), ICCV (2015-2019), BMVC (2015, 2017-2019), SIGGRAPH (2013)

TECHNICAL SKILLS

Languages: C/C++, Python, PyTorch, Matlab, Shell
Developer Tools: Git, Docker
Operating Systems: Ubuntu