Srinath Sridhar

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Education

2012–2016 **Ph.D. Computer Science**, *Max Planck Institute for Informatics* and *Saarland University*, Germany.
Dissertation: "Tracking Hands in Action for Gesture-based Computer Input."
Advisors: Christian Theobalt, Antti Oulasvirta.
Committee: Bernt Schiele, Hao Li, Hans-Peter Seidel (Chair).

2010–2012 **M.S.E. Electrical Engineering: Systems**, *University of Michigan*, Ann Arbor, USA.
Major: Computer Vision, Minor: Computer Science.

2006–2010 **B.E. Geoinformatics**, *College of Engineering Guindy, Anna University*, Chennai, India.
Thesis: "Multiple View Reconstruction & Documentation of Architectural Scenes."

Research Experience

Jul 2017–now **Stanford University**, *Postdoctoral Researcher, Geometric Computing Group*, CA, USA.
Advisor: Leonidas Guibas.

Jan–Jun 2017 **Max Planck Institute for Informatics**, *Postdoctoral Researcher*, Saarbrücken, Germany.
Advisor: Christian Theobalt.

2015–2016 **Microsoft Research Redmond**, *Research Intern, Interactive 3D Technologies Group*, WA, USA.
Mentor: Shahram Izadi.

May–Dec 2011 **Honda Research Institute Inc.**, *Research Intern*, Mountain View, USA.
Mentor: Victor Ng-Thow-Hing.

2011–2012 **Laboratory for Interactive Visualization in Engineering**, *Student Researcher*, Ann Arbor, USA.
Advisor: Vineet Kamat.

Awards & Fellowships

2019 **NeurIPS 2019 travel award** to attend the conference and present work on multiview reconstruction.
2019 **Best Paper Honorable Mention** at Eurographics 2019.
2018 Selected as a young researcher to participate in the **Heidelberg Laureate Forum 2018**.
2017 **Best Poster Award**, ICCV HANDS Workshop 2017.
2016 Selected to participate in the doctoral consortium and received a **travel grant for CVPR 2016**.
2013 **ACM Student Travel Grant** for CHI 2013.
2012–2016 **Max Planck Fellowship** for Ph.D. studies.
2011–2012 **Rackham International Student Fellowship**, University of Michigan, Ann Arbor.
2009 **Best Project Award**, *Single View Reconstruction of Buildings*, IIT Delhi.
2008 **CEG Alumni Association Travel Grant** for NASA Fundamental Aeronautics Conference.
2008 **Second Place, NASA Fundamental Aeronautics Student Contest**, USA.

Publications Google Scholar Semantic Scholar

Conference Papers (Peer-reviewed)

2020

[P.16] Davis Rempe, **Srinath Sridhar**, He Wang, Leonidas J. Guibas. *Predicting the Physical Dynamics of Unseen 3D Objects*. Winter Conference on Applications of Computer Vision (**WACV**) 2020.

2019

[P.15] **Srinath Sridhar**, Davis Rempe, Julien Valentin, Sofien Bouaziz, Leonidas J. Guibas. *Multiview Aggregation for Learning Category-Specific Shape Reconstruction*. Conference on Neural Information Processing Systems (**NeurIPS**) 2019.

[P.14] He Wang, **Srinath Sridhar**, Jingwei Huang, Julien Valentin, Shuran Song, Leonidas J. Guibas. *Normalized Object Coordinate Space for Category-Level 6D Object Pose and Size Estimation*. Conference on Computer Vision and Pattern Recognition (**CVPR**) 2019 [**oral presentation**].

[P.13] Davis Rempe, **Srinath Sridhar**, He Wang, Leonidas J. Guibas. *Learning Generalizable Physical Dynamics of 3D Rigid Objects*. Workshop on 3D Scene Understanding for Vision, Graphics and Robotics, **CVPRW** 2019.

[P.12] He Wang*, Soeren Pirk*, Ersin Yumer, Vladimir Kim, Ozan Sener, **Srinath Sridhar**, Leonidas J. Guibas. *Learning a Generative Model for Multi-Step Human-Object Interactions from Videos*. **Eurographics** 2019. (* equal contribution) [**best paper honorable mention**]

2018

[P.11] Dushyant Mehta, Oleksandr Sotnychenko, Franziska Mueller, Weipeng Xu, **Srinath Sridhar**, Gerard Pons-Moll, Christian Theobalt. *Single-Shot Multi-Person 3D Body Pose Estimation From Monocular RGB Input*. **3DV** 2018.

[P.10] Franziska Mueller, Florian Bernard, Oleksandr Sotnychenko, Dushyant Mehta, **Srinath Sridhar**, Dan Casas, Christian Theobalt. *GANerated Hands for Real-time 3D Hand Tracking from Monocular RGB*. Conference on Computer Vision and Pattern Recognition (**CVPR**) 2018.

2017

[P.9] Franziska Mueller, Dushyant Mehta, Oleksandr Sotnychenko, **Srinath Sridhar**, Dan Casas, Christian Theobalt. *Real-time Hand Tracking under Occlusion from an Egocentric RGB-D Sensor*. International Conference on Computer Vision (**ICCV**) 2017.

[P.8] Dushyant Mehta, **Srinath Sridhar**, Oleksandr Sotnychenko, Helge Rhodin, Mohammad Shafiei, Hans-Peter Seidel, Weipeng Xu, Dan Casas, Christian Theobalt. *VNect: Real-time 3D Human Pose Estimation with a Single RGB Camera*. ACM Transactions on Graphics (**SIGGRAPH**) 2017.

[P.7] **Srinath Sridhar**, Anders Markussen, Antti Oulasvirta, Christian Theobalt, Sebastian Boring. *WatchSense: On- and Above-Skin Input Sensing through a Wearable Depth Sensor*. SIGCHI Conference on Human Factors in Computing Systems (**CHI**) 2017.

2016

[P.6] **Srinath Sridhar**, Franziska Mueller, Michael Zollhöfer, Dan Casas, Antti Oulasvirta, Christian Theobalt. *Real-time Joint Tracking of a Hand Manipulating an Object from RGB-D Input*. European Conference on Computer Vision (**ECCV**) 2016.

2015

[P.5] **Srinath Sridhar**, Franziska Mueller, Antti Oulasvirta, Christian Theobalt. *Fast and Robust Hand Tracking Using Detection-Guided Optimization*. Conference on Computer Vision and Pattern Recognition (**CVPR**) 2015.

[P.4] **Srinath Sridhar**, Anna Maria Feit, Christian Theobalt, Antti Oulasvirta. *Investigating the Dexterity of Multi-Finger Input for Mid-Air Text Entry*. SIGCHI Conference on Human Factors in Computing Systems (**CHI**) 2015.

2014

[P.3] **Srinath Sridhar**, Helge Rhodin, Hans-Peter Seidel, Antti Oulasvirta, Christian Theobalt. *Real-time Hand Tracking Using a Sum of Anisotropic Gaussians Model*. International Conference on 3D Vision (**3DV**) 2014 [**oral presentation**].

2013

[P.2] **Srinath Sridhar**, Antti Oulasvirta, Christian Theobalt. *Interactive Markerless Articulated Hand Motion Tracking using RGB and Depth Data*. International Conference on Computer Vision (**ICCV**) 2013.

[P.1] Victor Ng-Thow-Hing, Karlin Bark, Lee Beckwith, Cuong Tran, Rishabh Bhandari, **Srinath Sridhar**. *User-Centered Perspectives for Automotive Augmented Reality*. International Symposium on Mixed and Augmented Reality (**ISMAR**) 2013.

Other Papers, Posters, Technical Reports, and Blog Posts

[O.8] **Srinath Sridhar**. *Learning to Generate Human–Object Interactions*. Stanford AI Lab Blog, 2019.

[O.7] **Srinath Sridhar**, Gilles Bailly, Elias Heydrich, Antti Oulasvirta, Christian Theobalt. *FullHand: Markerless Skeleton-based Tracking for Free-Hand Interaction*. MPI-I-2016-4-002. Saarbrücken: Max-Planck-Institut für Informatik 2016.

[O.6] Anna Maria Feit, **Srinath Sridhar**, Christian Theobalt, Antti Oulasvirta. *Investigating Multi-Finger Gestures for Mid-Air Text Entry*. Womencourage 2015.

[O.5] Anna Maria Feit, Myroslav Bachynskyi, **Srinath Sridhar**. *Towards Multi-Objective Optimization for UI Design*. Workshop on Principles, Techniques and Perspectives on Optimization and HCI, **CHI** 2015.

[O.4] **Srinath Sridhar**, Antti Oulasvirta, Christian Theobalt. *Fast Tracking of Hand and Finger Articulations Using a Single Depth Camera*. MPI-I-2014-4-002. Saarbrücken: Max-Planck-Institut für Informatik 2014.

[O.3] **Srinath Sridhar**. *HandSonor: A Customizable Vision-based Control Interface for Musical Expression*. SIGCHI Conference on Human Factors in Computing Systems (**CHI**) 2013.

[O.2] **Srinath Sridhar**, Victor Ng-Thow-Hing. *Generation of Virtual Display Surfaces for In-vehicle Contextual Augmented Reality*. International Symposium on Mixed and Augmented Reality (**ISMAR**) 2012.

[O.1] **Srinath Sridhar**, Vineet Kamat. *CAMFPLAN: A Real-time Markerless Camera Pose Estimation System for Augmented Reality*. UMCEE Report No. 11-01, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor 2012.

Patents

2015 Victor Ng-Thow-Hing, **Srinath Sridhar**. *Method to Generate Virtual Display Surfaces from Video Imagery of Road based Scenery*. U.S. Patent, US9135754 B2, 2015. Licensed by Honda Motor Co., Ltd.

Teaching Experience

2013–2016 **Course Assistant, Graduate Seminar on Computer Vision for Computer Graphics**, *Saarland University*.
Graded student work, participated in all discussions, held office hours, and provided individual feedback.

2013 **Lecturer, EIT ICT Smart Spaces Summer School**, *INRIA, Grenoble*.
Day-long workshop on "3D Interaction using Hand Motion Tracking" for advanced graduate students.

2012 **Teaching Staff, EECS 487: Computer Graphics**, *University of Michigan, Ann Arbor*.
Involved in designing and grading student assignments as well as exams for the course.

2009–2010 **Instructor & Organizer, Summer School on Mathematics and Astronomy**, *Anna University*.
Gave lectures on mathematics and astronomy for middle and high school students.

Service

International Program Committee: IEEE VR Conference Track (2020), Eurographics Short Papers (2018), Graphics Replicability Stamp Initiative (2019–), various workshops at CVPR (2015–2016, 2018–2019), ICCV (2017, 2019), and ECCV (2018).

Reviewer: CVPR, ICCV, ECCV, BMVC, TPAMI, SIGGRAPH Asia, Eurographics, CHI, UIST, AAAI, IMWUT/Ubicomp, IROS, ICRA, CVIU, 3DV, FG, Computer, IEEE VR, ACM ISS, Computing Surveys, IEEE CGA, ICLR.

Technical Skills

Languages: *Advanced*: C/C++, Python, MATLAB, LaTeX. *Beginner*: CUDA-C, JavaScript

Libraries: PyTorch, Keras, OpenCV, OpenGL, Qt, OpenMP, Eigen

Software Tools: Emacs, `bash` scripting, Git, Unity, GIMP, Adobe Premiere Pro, PowerPoint, Android Studio

Cloud: AWS (EC2, EFS, S3), Google Cloud

Hardware: Depth sensors (Kinect, SoftKinetic, PMD, Intel), single-board computers (Beaglebone Black), quadcopters

OS: GNU/Linux (Debian, Ubuntu), Windows, and Android

Selected Press

Robin.ly CVPR 2019 Paper Discussion, Robin.ly, July 30, 2019.

Samsung "Here's how to design a robot that can cook", Samsung NEXT Blog, April 30, 2019.

SR TV "VNect", Saarländischer Rundfunk (German State TV), June 21, 2017.

SR TV "WatchSense", Saarländischer Rundfunk (German State TV), May 21, 2017.

IEEE "Control Your Smartwatch without Touching It", IEEE Electronics 360, May 4, 2017.

ECE News "Student teams earn prizes in EECS 556: Image Processing", Michigan EECS, April 29, 2011.

References

Available on request.