Shrisha Bharadwaj

Education

Max Planck Institute for Intelligent Systems *Tübingen, Germany*
PhD in Computer Science *Oct 2024 – Present*
Supervisor: Dr. Michael J. Black, Dr. Victoria Fernandez-Abrevaya

University of Tübingen *Tübingen, Germany*
MSc in Machine Learning *Oct 2019 – Jun 2022*
Supervisor: Prof. Andreas Geiger

B.M.S College of Engineering *Bengaluru, India*
BEng in Electronics and Telecommunication *Jun 2014 – Jun 2018*

Publications

GenLit: Reformulating Single Image Relighting as Video Generation
Shrisha Bharadwaj*, Haiwen Feng*, Giorgio Becherini, Victoria Fernandez Abrevaya, Michael J. Black.
ACM SIGGRAPH Asia Conference Proceedings, 2025.

SPARK: Self-supervised Personalized Real-time Monocular Face Capture
Kelian Baert, Shrisha Bharadwaj, Fabien Castan, Benoit Maujean, Marc Christie, Victoria Fernandez Abrevaya, Adnane Boukhayma.
ACM SIGGRAPH Asia Conference Proceedings, 2024.

FLARE: Fast learning of Animatable and Relightable Mesh Avatars
Shrisha Bharadwaj, Yufeng Zheng, Otmar Hilliges, Michael J. Black, Victoria Fernandez Abrevaya.
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia), 2023.

A Novel Self-Supervised Re-labeling Approach for Training with Noisy Labels
Devraj Mandal*, Shrisha Bharadwaj*, Soma Biswas.
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2020.

Experience

Max Planck Institute for Intelligent Systems *Tübingen, Germany*
Research Intern | *Supervisor*: Dr. Victoria Fernandez-Abrevaya *Sept 2022 – Sept 2024*
Developed a neural approximation to the split-sum rendering equation to disentangle lighting, materials, and geometry from monocular views, enabling relightable 3D reconstructions and animation with 3DMM.

University of Tübingen *Tübingen, Germany*
MSc. Thesis | *Supervisor*: Prof. Andreas Geiger *Nov 2021 – Jun 2022*
Depth-guided 3D Reconstruction with Radiance Fields: Introduced depth-based confidence maps to improve the efficiency of sampling the points. Implemented depth-based supervision to improve 3D reconstruction. Evaluated on ShapeNet and incorporated stereo-priors to improve results on the KITTI-360 dataset.

Research Assistant | *Supervisor*: Prof. Andreas Geiger *Nov 2020 – Jun 2021*
Holistic Scene Perception: Developed a point-based and voxel-based shape completion method to improve 3D reconstruction given sparse point clouds as input. Ablations were conducted on a weighted-chamfer distance to tackle sparse regions. Experiments were conducted on the KITTI-360 dataset and the leaderboard: EncDec.

Research Assistant | *Supervisor*: Prof. Philipp Hennig *Apr 2020 - Apr 2021*
BackPack: is build on PyTorch to compute second-order quantities other than the gradient. I worked on supporting (transposed-) convolutional for 2D/3D and activation layers for estimating diagonal hessian, variance, gauss-newton diagonal and KFAC during the backward pass.

Indian Institute of Science *Bengaluru, India*
Research Intern | *Supervisor*: Prof. Soma Biswas *Apr 2019 – Oct 2019*
Built a method based on co-teaching to identify label noise and a clustering technique to re-label noisy labels with self-supervision. Evaluated it on MNIST, CIFAR10 and CIFAR100.

Cognitifai *Bengaluru, India*
Computer Vision Engineer | *Supervisor*: Dr. Sivaram Prasad Mudunuri *Aug 2018 – Mar 2019*
Developed a pedestrian attribute recognition framework and trained it to recognise hand-held accessories with a weighted loss to address class imbalance in data. Developed a framework by combining a segmentation network with YOLOv2 to detect garbage bins from street photographs to estimate overflow.

Skills

Programming: Python, PyTorch, Blender, Git, LaTeX.
Library: Diffusers, NVDiffrast.
Areas: Neural Rendering, Relighting, Video Diffusion Models, Physically-based Rendering, 3D Reconstruction, Inverse Rendering, NeRFs, Digital Humans, 3DMM.

Academic Services

Reviewer
SIGGRAPH Asia *2025*
Eurographics *2025*
CVPR *2026*

Languages

English (proficient), German (basic), Kannada, and Tamizh (native)