Varun Sundar

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Education

University of Wisconsin Madison   Jan 2021–Present
PhD candidate, Computer Science, GPA: 4.0/4.0.
Advised by Mohit Gupta.

Indian Institute of Technology Madras   2016–2020
B.Tech in Electrical Engineering, GPA: 9.67/10.0.

Experience

Graduate Research Assistant   2021–Present
WISIONLab, University of Wisconsin-Madison.   PI: Mohit Gupta.
Algorithms and applications for single photon devices.

Undergraduate Research Assistant   2019–2020
Computational Imaging Lab, Indian Institute of Technology Madras.   PI: Kaushik Mitra.
Data-driven algorithms for lensless image reconstruction.

Undergraduate Research Intern   May–Aug 2019
Iris Vision Lab, University of Southern California.   PI: Ram Nevatia.
Attribute and object detection on partially annotated datasets.

Machine Learning Intern   May–Aug 2018
Satellite Imaging Team, Hyperverge India.   Mentor: Nikhil Naphade.
Robust asset detection from large-scale satellite data.

Publications

A Live Demo of Single-Photon Imaging and Applications   SIGGRAPH E-Tech 2024
S Jungerman[*], **V Sundar**[*], and M Gupta.
Best in show award.

Generalized Event Cameras   CVPR 2024
V Sundar[*], M Dutson[*], A Ardelean, C Bruschini, E Chabron and M Gupta.
Patent filed.

SoDaCam: Software-defined Cameras via Single-Photon Imaging   ICCV 2023
Oral presentation, 1.8% acceptance rate
V Sundar, A Ardelean, T Swedish, C Bruschini, E Chabron and M Gupta.
Provisional patent filed.

Seeing Photons in Color   SIGGRAPH 2023
S Ma, **V Sundar**, P Mos, C Bruschini, E Chabron and M Gupta.

Single-Photon Structured Light   CVPR 2022
V Sundar, S Ma, A Sankaranarayanan and M Gupta.
US Patent App. 17/807,656, 2023.

[Reprod.] Rigging the Lottery: Making All Tickets Winners   Rescience C 2020
V Sundar and R Dwaraknath.

Towards Photorealistic Scene Reconstruction of Lensless Measurements   TPAMI 2020
SS Khan[*], **V Sundar**[*], V Boominathan, A Veeraraghavan and K Mitra.

Deep Atrous Guided Filter for UDC Image Restoration		ECCV Workshops, 2020
V Sundar[*], S Hegde[*], D Kothandaraman and K Mitra.		

[*] denotes equal contribution.

Awards and honors	**SIGGRAPH 2024 Emerging Technologies *Best in Show* award.** **UW-Madison Summer Research Award, 2021.** **Under Display Challenge, ECCV 2020:** 2nd, 5th (P-OLED, T-OLED tracks). **Graduate Scholarship at UW Madison:** fall 2021 and spring 2022. **IUSSTF-Viterbi REU at USC:** one of 15 awardees among 1000+ applicants. Mentored by Ram Nevatia, summer 2019.

Talks and presentations	*Generalized Event Cameras*

- CVPR (poster), CVPR CCD   tentatively in June 2024
- Camera Culture Group, MIT   April 2024

SoDaCam: Software-defined Cameras via Single-Photon Imaging

- ICCV (oral)   October 2023
- Sony Research   October 2023
- ICCP (poster and demo)   August 2023
- UW-Madison Research Symposium   April 2023

Single-Photon Structured Light

- Cruise AI   October 2022
- ICCP (spotlight, poster)   August 2022
- Sony Research   June, August 2022
- CVPR (poster), CVPR CCD   June 2022

[Reprod.]Rigging the Lottery: Making All Tickets Winners

- Weights and Biases Salon   March 2021

Towards Photorealistic Scene Reconstruction of Lensless Measurements

- CVPR CCD   June 2020

Additional	**Reviewing:** CVPR (2023, 2024), ICCV (2023), ECCV (2024), ML Reproducibility 2022. **Service:** ICCP 2023 (social media chair). **Technical Skills:** Python, C, C++, MATLAB (prog. languages); Numpy, Numba, Scipy, Taichi (scientific packages); Pytorch, Tensorflow and JAX (ML frameworks). **Misc:** Teaching Assistant for Computer Vision (fall 2021, spring 2022) and Data Science (spring 2021) at UW-Madison.

References	Mohit Gupta, Associate Professor in CS, UW-Madison.	Aswin Sankaranarayanan, Professor in EE, Carnegie Melon University.	Kaushik Mitra, Assistant Professor in EE, IIT Madras.