Varun Sundar

Contact — Email: vsundar4@wisc.edu — Webpage: varun19299.github.io

Education

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

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

Experience

Graduate Research Assistant — 2021–Present
WISIONLab, UW-Madison. — PI: Mohit Gupta.
Algorithms and applications for high-speed single photon devices.

Undergraduate Research Assistant — 2019–2020
Computational Imaging Lab, IIT Madras. — PI: Kaushik Mitra.
End-to-end data-driven algorithms for lensless image reconstruction.

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

Publications

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

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

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

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 (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: ICCV 2023, CVPR 2023, 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,
University of Wisconsin-Madison.

Aswin Sankaranarayanan,
Professor in EE,
Carnegie Melon University.

Kaushik Mitra,
Assistant Professor in EE,
Indian Institute of Technology Madras.