Siddharth Somasundaram

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Current Appointment

Graduate Research Assistant
Massachusetts Institute of Technology
Advisor: Ramesh Raskar

Education

Massachusetts Institute of Technology 2024 - Present
PhD, Media Lab

Massachusetts Institute of Technology 2022 - 2024
MS, Media Lab

University of California, Los Angeles 2017 - 2021
BS, Electrical Engineering

Honors and Awards

NSF Graduate Research Fellowship Program 2024
CVPR Award Candidate 2024
Outstanding B.S. in ECE Finalist 2021
Eta Kappa Nu 2019
UCLA ECE Fast Track Program 2017

Visiting Positions

University of Toronto Toronto, CA
Visiting Graduate Student 2024
Host: Kyros Kutulakos and David Lindell

MIT Media Lab, Camera Culture Cambridge, MA, USA
Research Staff 2021-2022
Advisor: Ramesh Raskar

HRL Laboratories Malibu, CA, USA
Quantum Optics Research Intern 2020
Manager: Thaddeus Ladd

The Aerospace Corporation El Segundo, CA, USA
Photonics Technology Engineer Intern 2019
Manager: William Lotshaw

Invited Talks

IIT Madras 2023
Host: Kaushik Mitra

CMU Reading Group 2022
Host: Matthew O'Toole

Referee Service

IEEE Transactions on Computational Imaging

Publications

Please refer to my Google Scholar for a complete list.

[P.9] T-H. Lin, C. Henley, **S. Somasundaram**, A. Dave, M. Laifenfeld, R. Raskar, "Handheld Mapping of Specular Surfaces using Consumer-Grade Flash LiDAR", **ICCP 2024**.

[P.8] T. Klinghoffer, X. Xiang*, **S. Somasundaram***, Y. Fan, C. Richardt, R. Raskar, R. Ranjan, "PlatoNeRF: 3D Reconstruction in Plato's Cave via Single-View Two-Bounce Lidar", **CVPR 2024 (Award Candidate $< 0.3\%$ Acceptance)**.

[P.7] **S. Somasundaram**, A. Dave, C. Henley, A. Veeraraghavan, R. Raskar, "Role of Transients in Two-Bounce Non-Line-of-Sight Imaging," **CVPR 2023**.

[P.6] C. Henley, **S. Somasundaram**, J. Hollmann, R. Raskar, "Detection and Mapping of Specular Surfaces Using Multibounce Lidar Returns," **Optics Express 2023**.

[P.5] **S. Somasundaram***, T. Klinghoffer*, K. Tiwary*, R. Raskar, "Physics vs. Learned Priors: Rethinking Camera and Algorithm Design for Task-Specific Imaging," **ICCP 2022**.

[P.4] D. Ren, K. Azizur-Rahman, Z. Rong, B. Juang, **S. Somasundaram**, M. Shahili, A. Farrell, B. Williams, D. Huffaker, "Room-Temperature Mid-Wavelength Infrared InAsSb Nanowire Photodetector Arrays with Al_2O_3 Passivation," **Nano Letters 2019**.

[P.3] D. Ren, Z. Rong, K. Azizur-Rahman, **S. Somasundaram**, M. Shahili, D. Huffaker, "Feasibility of Achieving High Detectivity at Short- And Mid-Wavelength Infrared Using Nanowire Photodetectors with P-N Heterojunctions," **Nanotechnology 2019**.

[P.2] D. Ren, Z. Rong, **S. Somasundaram**, K. Azizur-Rahman, B. Liang, D. Huffaker, "A Three-Dimensional Insight into Correlation Between Carrier Lifetime And Surface Recombination Velocity for Nanowires," **Nanotechnology 2018**.

[P.1] D. Ren, X. Meng, Z. Rong, C. Minh, A. C. Farrell, **S. Somasundaram**, K.M. Azizur-Rahman, B.S. Williams, D.L. Huffaker, "Uncooled Photodetector at Short-Wavelength Infrared Using InAs Nanowire Photoabsorbers on InP with P-N Heterojunctions," **Nano Letters 2018**.

Non-Refereed Publications

[P.3] N. Behari, A. Young, **S. Somasundaram**, T. Klinghoffer, A. Dave, R. Raskar, "Blurred LiDAR for Sharper 3D: Robust Handheld 3D Scanning with Diffuse LiDAR and RGB", 2024

[P.2] M. Muglikar, **S. Somasundaram**, A. Dave, E. Charbon, D. Scaramuzza, R. Raskar, "Event Cameras Meet SPADs for High-Speed, Low-Bandwidth Imaging", arXiv preprint arXiv:2404.11511, 2024.

[P.1] K. Tiwary, T. Klinghoffer, A. Young, **S. Somasundaram**, N. Behari, A. Dave, B. Cheung, D. Nilsson, T. Poggio, R. Raskar, "A Roadmap for Generative Design of Visual Intelligence", **MIT Press**

Thesis

Mobile Multi-Bounce LiDAR 2024
M.S. Thesis, *Massachusetts Institute of Technology*

Media Coverage

MIT News 2023
PlatoNeRF: 3D Reconstruction in Plato's Cave via Single-View Two-Bounce Lidar [web]