# Sreekar Ranganathan


**Contact Information**

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**Research**

My research seeks to bridge the gap between computer vision/graphics and wave optics to push the limits of passive 3D sensing. This involves developing theory, capture hardware, and algorithms to measure and exploit the rich information encoded in the wavefields of ambient light. My work has enabled passive depth sensing of textureless scenes, a decades-old problem in computer vision.

**Education**

*PhD, Electrical and Computer Engineering* — 2023–present
Carnegie Mellon University
Advisor: Prof. Ioannis Gkioulekas

*M.Tech, Electrical Engineering* — 2022–2023
Indian Institute of Technology Madras
Advisor: P.D. Dr. Tobias Lasser (TU Munich)

*B.Tech, Electrical Engineering* — 2018–2023
Indian Institute of Technology Madras
Advisor: Prof. Uday Khankhoje

**Employment**

*Graduate Research Assistant* — Aug 2023–present
Carnegie Mellon University
Advisor: Prof. Ioannis Gkioulekas

*DAAD KOSPIE Scholar* — Sep 2022–Mar 2023
Technical University of Munich, Germany
Advisor: P.D. Dr. Tobias Lasser

*Summer Research Intern* — May 2022–Aug 2022
Laboratoire Kastler Brossel, ENS Paris, France
Advisors: Prof. Sylvain Gigan, Dr. Fernando Soldevila

*Undergraduate Researcher* — Sep 2020–May 2022
NEMO Group, Indian Institute of Technology Madras
Advisors: Prof. Uday Khankhoje, Prof. Francesco Ferranti (VUB)

*Summer Intern* — Apr 2020–Jun 2020
BigCat Wireless Pvt. Ltd., Chennai, India
Supervisor: Mr. Kannan Gaddam

*NIUS Scholar* — Dec 2019–Oct 2021
Giant Metrewave Radio Telescope (NCRA–TIFR), Khodad, India
Supervisor: Mr. Kaushal D. Buch

**Publications**

[1] **Sreekar Sai Ranganathan**, Ioannis Gkioulekas
*A second-order theory of texture for depth from focus*
European Conference on Computer Vision (ECCV), 2026. **(long oral)**

[2] **Sreekar Sai Ranganathan**, K. P. Prajosh, Uday K. Khankhoje, Francesco Ferranti

*Spotting faults over the spectrum: Fast and online antenna array fault diagnosis for multi-carrier precoding systems*
IEEE Transactions on Wireless Communications, 2023

[3] K. P. Prajosh, **Sreekar Sai Ranganathan**, Francesco Ferranti, Uday K. Khankhoje
*Efficient Mutual-Coupling Aware Fault Diagnosis of Phased Array Antennas Using Optimized Excitations*
IEEE Antennas and Wireless Propagation Letters, 2022

## Teaching

*Summer School on Computational Imaging, ICCP 2026*
Co-organizer, Interferometric 3D Imaging (link), Princeton, NJ, Jul 2026

*18-665 Advanced Probability and Statistics for Engineers*
Teaching assistant, Carnegie Mellon University, Spring 2026

*Summer School on Computational Imaging, ICCP 2025*
Co-organizer, Interferometric 3D Imaging, Toronto, Canada, Jul 2025

*15-468 Physics-Based Rendering*
Lecture, Carnegie Mellon University, Spring 2025

*18-290 Signals and Systems*
Teaching assistant, Carnegie Mellon University, Fall 2024

*Applied Linear Algebra (NPTEL MOOC)*
Teaching assistant, Indian Institute of Technology Madras, Jan–Apr 2021

## Honors and Awards

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|---|---|
| Carnegie Institute of Technology Dean's Fellowship | 2023 |
| Philips India Prize, IIT Madras | 2023 |
| DAAD KOSPIE Scholarship | 2022–23 |
| Dr Jayant Baliga Scholarship, IIT Madras | 2020–21 |
| M Sankaraiah and M Saradha Scholarship, IIT Madras | 2020–21 |
| Joint Entrance Examination (Main), ranked 710 among over 1 million candidates | 2018 |

## Service and Outreach

*CMU Imaging Reading Group*
Co-organizer, Carnegie Mellon University, Aug 2024–present

*Gelfand Outreach Program (Summer)*
Teaching assistant and demo presenter, Carnegie Mellon University, Jul 2024