Salman Siddique Khan

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RESEARCH Interest My field of research is Computational Imaging and Computer Vision. I work on designing new imaging systems and computational techniques that extend the capabilities of conventional cameras.

EDUCATION

Indian Institute of Technology Madras, Chennai, India

2018 - 2023

- M.S. Ph.D., Department of Electrical Engineering
- Advisor: Prof. Kaushik Mitra.

National Institute of Technology, Rourkela, India.

2014-2018

• B.Tech., Electronics and Instrumentation Engineering.

Work Experience

Rice University

Aug 2023 -

- Position: Postdoctoral Associate
- Mentor: Dr. Ashok Veeraraghavan.

NEC Labs America

June 2022 – Dec 2022

- **Position**: Research Intern
- **Topic**: Designing cameras that perform optical encryption.
- Mentor: Dr. Francesco Pittaluga, Dr. Manmohan Chandraker.

Rice University

May – Nov 2019, Jan – July 2021

- Position: Research Associate
- Topic: Designing optical and analog components for privacy-enhancing cameras.
- Mentor: Dr. Ashok Veeraraghavan.

Indian Statistical Institute

May 2016 - July 2016

- Position: Intern
- **Topic**: Random forest based histopathology image segmentation.
- Mentor: Dr. Angshuman Paul.

SELECTED PUBLICATIONS

- 1. Salman S. Khan, Vivek Boominathan, Ashok Veeraraghavan, Kaushik Mitra, "Designing Optics and Algorithm for Ultra-thin, High-speed Lensless Cameras", IEEE Internal Conference on Multimedia and Expo (ICME) 2023.
- 2. Atreyee Saha, **Salman S. Khan**, Sagar Sehrawat, Sanjana Prabhu, Shanti Bhattacharya, Kaushik Mitra, "**LWGNet: Learned Wirtinger Gradients for Fourier Ptychographic Phase Retrieval**", European Conference on Computer Vision (ECCV) 2022, Tel Aviv, Israel.
- 3. Dhruvjyoti Bagadthey, Sanjana Prabhu, **Salman S. Khan**, Tony Fredrick, Vivek Boominathan, Ashok Veeraraghavan, Kaushik Mitra, "FlatNet3D: Intensity And Absolute Depth from Single-shot Lensless Capture", Journal of the Optical Society of America A (JOSA A) 2022.

- 4. Salman S. Khan, Varun Sundar, Vivek Boominathan, Ashok Veeraraghavan, Kaushik Mitra, "FlatNet: Towards Photorealistic Scene Reconstruction from Lensless Measurements", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2020.
- Jasper Tan, Salman S. Khan, Vivek Boominathan, Jeffrey Byrne, Richard Baraniuk, Kaushik Mitra, Ashok Veeraraghavan, "CAnOPIC: Pre-Digital Privacy-Enhancing Encodings for Computer Vision", IEEE International Conference on Multimedia and Expo (ICME) 2020, London, UK. (Oral)
- Salman S. Khan, Adarsh V.R., Vivek Boominathan, Jasper Tan, Ashok Veeraraghavan, Kaushik Mitra, "Towards Photorealistic Reconstruction of Highly Multiplexed Lensless Images", IEEE International Conference on Computer Vision (ICCV) 2019, Seoul, Korea. (Oral)

PATENT

1. Atreyee Saha, Salman S. Khan, Sagar Sehrawat, Sanjana Prabhu, Shanti Bhattacharya, Kaushik Mitra, "An Imaging System and a Method for Fourier Ptychographic Microscopy (FPM)". Patent No. 423241.

Honors and Awards

- Awarded the Qualcomm Innovation Fellowship India 2020-21.
- Awarded Google Travel Grant to attend ICCV 2019 at Seoul, South Korea.
- National Finalist in NIYANTRA 2017 Annual Student Design Contest

TEACHING EXPERIENCE

Teaching Assistant

- EE 5176 Computational Photography: Spring 2019, 2021, 2022
- EE 6132 Modern Computer Vision: Fall 2020
- EE 5180 Introduction to Machine Learning: Spring 2023
- EE 1101 Signals and Systems: Spring 2020
- EE 3110 Probability Foundations for Electrical Engineers: Fall 2021

Service Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Computational Imaging
- IEEE Open Journal of Signal Processing
- Optica Optics Express
- Optica Continuum
- IEEE Winter Conference on Applications of Computer Vision
- Journal of Open Source Software

SKILLS Python(PyTorch, OpenCV), MATLAB, Blender, LabView.