Prasan Shedligeri

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EDUCATION

Indian Institute of Technology, Madras   Chennai, India
MS and PhD in Electrical Engineering; **CGPA**: 9.17/10   July 2016 – Nov 2021
- Field of Research: **Computational Photography, Computer Vision, Image Processing, Deep learning**
- Skills: Python, Matlab, Pytorch, Deep learning, Machine learning
- Key Courses: *Computational Photography, Machine Learning for Computer Vision, Probability and Random Processes, Linear Algebra, Convex Optimization, Photometry and Geometry based Computer Vision, Image Signal Processing*
- **Thesis**: Reconstructing High Temporal and Angular Resolution Videos from Low Data Bandwidth Measurements (pdf)

M.S. Ramaiah Institute of Technology   Bengaluru, India
B.E. in Electronics and Communication Engineering; **CGPA**: 9.50/10   Aug. 2011 – June 2015
- Key Courses: *Digital Image Processing, Numerical Methods in Mathematics, Object Oriented Programming with C++, Cryptography and Network Security*
- **Thesis**: Hardware Implementation of a Digital Watermarking System for Video Authentication

WORK EXPERIENCE

Research employee   University of Bonn, Germany
Mentor: Prof. Matthias Hullin   Feb 2022 – now
- Automatic geometric calibration of self-organizing lenslet arrays for light-field imaging

Research Internship   Northwestern University, United States
Mentors: Prof. Oliver Cossairt and Prof. Aggelos Katsaggelos   Aug 2019 – Aug 2020
- Built learning-based models for light-field dimensionality reduction for use in holographic displays.

Summer Internship   Samsung Research Institute, Bengaluru
Mentor: Dr. Rituparna Sarkar   May 2018 – July 2018
- Worked towards developing an exposure-robust algorithm for depth estimation from monocular video.

Graduate Engineer Trainee   Idea Cellular Limited, Bengaluru
Switch Engineer   June 2015 – April 2016
- Worked with a team of 12 people helping them to maintain the core nodes in a cellular network like HLR and MSCs.

PUBLICATIONS

Full list: click here

Synthesizing Light Field Video from Monocular Video
- *Accepted at European Conference on Computer Vision (ECCV), 2022*
  Authors: Shrisudhan G, **Prasan Shedligeri**, Sarah, Kaushik Mitra

SeLFVi: Self-supervised Light-Field Video Reconstruction from Stereo Video
- *IEEE International Conference on Computer Vision (ICCV), 2021*
  Authors: **Prasan Shedligeri**, Florian Schiffers, Sushobhan Ghosh, Oliver Cossairt, Kaushik Mitra

Improving Acquisition Speed of X-Ray Ptychography through Spatial Undersampling
- *IEEE International Conference on Image Processing (ICIP), 2021*
  Authors: **Prasan Shedligeri**, Florian Schiffers, Semih Barutcu, Pablo Ruiz, Aggelos Katsaggelos, Oliver Cossairt

High Frame Rate Optical Flow Estimation from Event Sensors via Intensity Estimation
- *Elsevier Journal of Computer Vision and Image Understanding (CVIU), 2021*
  Authors: **Prasan Shedligeri**, Kaushik Mitra

CodedRecon: Video reconstruction for coded exposure imaging techniques
- *Elsevier Journal of Software Impacts (SIMPAC), 2021 (Invited publication)*
  Authors: **Prasan Shedligeri**, Anupama S, Kaushik Mitra

A Unified Framework for Compressive Video Recovery from Coded-Exposure Techniques

- *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2021*
  Authors: **Prasan Shedligeri**, Anupama S, Kaushik Mitra

Video Reconstruction by Spatio-Temporal Fusion of Blurred-Coded Image Pair

- *IAPR 25th International Conference on Pattern Recognition (ICPR), 2020*
  Authors: Anupama S, **Prasan Shedligeri**, Abhishek Pal, Kaushik Mitra

Photorealistic Image Reconstruction from Hybrid Intensity and Event based Sensor

- *SPIE Journal of Electronic Imaging (JEI), 2019*
  Authors: **Prasan Shedligeri**, Kaushik Mitra

Scholastic Achievements

- Winner of the Qualcomm Innovation Fellowship (QIF)[1] for the year 2021-22 for a proposal titled '*Self-supervised Light-Field Video Reconstruction for Smartphones*'.

- Selected for Doctoral Consortium at the IEEE WACV 2021 where I was mentored by Dr. Amanda Fernandez, an assistant professor at University of Texas, San Antonio.

- Secured a Research Travel Scholarship of 5000 USD from RBC-DSAI[2], IIT Madras to visit Northwestern University as a short-term visiting scholar.

- Secured internship at Samsung Research Institute, Bengaluru during the summer of 2018.

- One of the 20 finalists out of 95 competing teams across 7 premier Indian institutes in QIF India 2018. The 95 competing teams were from 7 different premier Indian institutes.

- Awarded travel grant of 1000 USD to attend IEEE International Conference on Image Processing 2017 by IEEE Signal Processing Society.

Academic Projects

High-speed imaging using hybrid intensity and event sensors

- *IIT Madras*   Aug 2017 – May 2018
  Ketul Shah, Dhruv Kumar, Dr. Kaushik Mitra
    - Collected a video dataset where a DSLR and the event sensor were co-located using a beam-splitter.

TEACHING EXPERIENCE

Deep Learning for Image Processing for Dr. K. Mitra and Dr. A. N. Rajagopalan *IIT Madras*	Fall 2017
Digital Signal Processing for Dr. Kaushik Mitra *IIT Madras*	Winter 2018
Lab for Data Analytics for Dr K. Mitra and Dr. V. Ramaiyan *IIT Madras*	Fall 2018
Computational Photography for Dr. K. Mitra *IIT Madras*	Winter 2019,2021
Modern Computer Vision for Dr. K. Mitra and Dr. A. N. Rajagopalan *IIT Madras*	Fall 2020

MISCELLANEOUS ACTIVITIES

- **Reviewer**
    - Reviewed papers for WACV (2021, 2022, 2023), Siggraph Asia (2022) and ICIP (2022)
- **Talks**
    - Invited talk for SLIM group at Michigan State University and Computational Light Transport lab at University of Bonn, on light-field video reconstruction
    - Presented a online guest lecture for the students of Computer Graphics course (NUCS396) at the CS department of Northwestern University

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[1]Qualcomm Innovation Fellowship: a one year fellowship with 1 million INR awarded to innovative projects
[2] Robert Bosch Centre for Data-Science and AI (RBC-DSAI)