

Zaid Tasneem

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EDUCATION

- **PhD in Electrical and Computer Engineering** Final Year
Rice University Houston, TX
- **Master of Science in Electrical and Computer Engineering** May 2018
University of Florida Gainesville, FL
- **Bachelor of Technology in Mechanical Engineering** June 2016
Indian Institute of Technology, Kanpur India

RESEARCH EXPERIENCE

- **Visting Researcher to Dr. Ramesh Raskar** June - August 2023
Camera Culture Group at MIT MediaLabs Cambridge, MA
 - **Privacy-Aware Decentralized Neural Radiance Fields**: Federated Learning of 3D scene representations from crowd-sourced images at global scale.
- **Research Assistant to Dr. Ashok Veeraraghavan** June 2019 - Present
Computational Imaging Lab at Rice University Houston, TX
 - **Privacy-aware In-Pixel Neural Networks**: Analog in-pixel Neural Network algorithms to achieve hardware-level privacy for eye, face and text detection.
 - **Privacy-aware Meta-Optics**: Differentiable optimization of metasurface parameters for identity agnostic person detection.
 - **DARPA wound monitoring**: Lensless wearable microscopes for continuous monitoring of optical bio-markers such as perfusion and vasculature inside wounds.
 - **SONY Lensless Cameras**: Lensless Imaging prototypes for real-time photorealistic reconstructions using fully convolutional neural networks.
- **Research Intern to Dr. Manmohan Chandraker** May - August 2020/21
Media Analytics, NEC Labs America San Jose, CA
 - **Deep Optics for Visual Privacy**: End-to-End adversarial optimization of optics for privacy-aware computational cameras capable of 3D Sensing, Activity Recognition, Pose Estimation, and Person Detection.
- **Research Assistant to Dr. Sanjeev Koppal** August 2016 - April 2019
FOCUS Lab at University of Florida Gainesville, FL
 - **Deep Depth Completion**: Camera and MEMS modulated LIDAR for color-guided depth upsampling.
 - **Adaptive Depth Sensing**: Developed a MEMS steerable LIDAR imaging system.
- **Research Intern to Dr. Achim Menges** May 2015 - July 2015
Institute for Computational Design (ICD) at University of Stuttgart Germany
 - **Indoor localization for MAVs**: Developed localization framework for a quadrotor using sensor fusion of visual odometry and IMU readings.

PUBLICATIONS

- [1] DecentNeRFs: Decentralized Neural Radiance Fields from Crowdsourced Images (under review)
Zaid Tasneem, A. Dave, A. Singh, K. Tiwary, P. Vepakomma, Ashok Veeraraghavan, Ramesh Raskar
- [2] Privacy-aware Meta-Optics (in submission)
Zaid Tasneem, Johannes Froch, Yongyi Zhao, Arka Majumdar, Ashok Veeraraghavan
- [3] Learning Phase Mask for Privacy-Preserving Passive Depth Estimation
European Conference on Computer Vision (ECCV), 2022
Zaid Tasneem, G. Milione, X. Yu, Y. Tsai, A. Veeraraghavan, M. Chandraker, Francesco Pittaluga

- [4] A Flexible LIDAR System to Leverage Guided Depth Completion
International Conference on 3D Vision (3DV), 2020
Zaid Tasneem*, Francesco Pittaluga*, Justin Folden, Ayan Chakrabarti, Sanjeev Koppal
- [5] Adaptive Fovea for Scanning Depth Sensors
International Journal of Robotics Research (IJRR), 2020
Zaid Tasneem, Charuvahan Adhivarahan, Dingkang Wang, Huikai Xie, Karthik Dantu, Sanjeev Koppal
- [6] Directionally Controlled Time-of-Flight Ranging for Mobile Sensing Platforms
Robotics: Science and Systems XIV, 2018
Zaid Tasneem, Dingkang Wang, Huikai Xie and Sanjeev J. Koppal
- [7] An Integrated Forward-View 2-Axis MEMS Scanner for Compact 3D LIDAR (**Best Student Paper**)
International Conference on Nano/Micro Engineered and Molecular Systems (IEEE NEMS), 2018
Dingkang Wang, Stephan Strassle Rojas, Alexander Shuping, **Zaid Tasneem**, Sanjeev Koppal, Huikai Xie

PATENTS

- [1] Fast Foveation Camera and Controlling Algorithms - US Patent 11,800,205, 2023
Sanjeev Jagannatha Koppal, **Zaid Tasneem**, Dingkang Wang, Huikai Xie, Brevin Jeffery Tilmon
- [2] Learning privacy-preserving optics via adversarial training - US Patent App. 17412704
Francesco Pittaluga, **Zaid Tasneem**, G. Milione, Xiang Yu, Manmohan Chandraker, Yi-Hsuan Tsai

SKILLS

- **Languages:** Python, Java, C/C++
- **Technologies:** Tensorflow, PyTorch, ROS, MATLAB, Flower, AutoCAD, Blender, Arduino IDE
- **Relevant Courses:** Deep Learning, Computational photography, Imaging Optics, Efficient Machine Learning, Computer Vision and Image Processing, Elements of Machine Intelligence, Biometric Identification, Pattern recognition, Probabilistic Mobile Robotics, Robot manipulators, Autonomous UAS