

<b>EDUCATION</b>	<i>Doctor of Philosophy</i> , Imaging Science Rochester Institute of Technology, Rochester, NY August 2018 - Present CGPA: 3.69/4
	<i>Master of Technology</i> , Signal Processing College of Engineering Pune, India August 2013 - May 2015 CGPA: 9.13/10
	<i>Bachelor of Technology</i> , Electronics and Communication Ramdeobaba College of Engineering and Management, Nagpur, India May 2009 - July 2013 CGPA: 73.02%
<b>EXPERIENCE</b>	<i>Research Intern</i> 17 May - 3 Sept 2021 AR Display Engineering Team, Facebook Reality Labs Worked on simulating AR pipeline for evaluating its perceptual impact and image quality.
	<i>Research Assistant</i> Fall 2019 - Present Working in Visual Imaging and Technology Lab with Dr. James Ferwerda in developing techniques for surface and material capture and visualization of cultural heritage objects for realistic digitization.
	<i>Teaching Assistant</i> <ul style="list-style-type: none"><li>• Computer Resource Pool Spring 2019 Responsible for solving programming queries in the department.</li><li>• Imaging Science Fundamentals Fall 2018 Responsible for conducting and grading labs.</li></ul>
	<i>System Engineer</i> June 2015 - July 2018 Engineering and Industrial Services unit, Tata Consultancy Services, Pune, India <ul style="list-style-type: none"><li>• Led Scripting functionality of Monitoring and Control (M&amp;C) System for Giant Metrewave Radio Telescope (GMRT) which is a precursor for Square Kilometer Array (SKA).</li><li>• Redesigned an existing unstable scripting engine that automated operation and data collection from the telescope array. The implementation increased requirement coverage from 20% to 100%.</li><li>• Led alarm designing for M&amp;C system. Improved alarm configuration time by 80%. Increased requirement coverage from 40% to 80%.</li><li>• Started an initiative to apply machine learning in automation of data capture and processing and in health and fault analysis of large experimental setup such as GMRT.</li></ul>
<b>COURSES COMPLETED</b>	Image Processing and Computer Vision, Radiometry, The Human Visual System, Optics for Imaging, Foundation of Computer Graphics, Global Illumination

## SKILLS

Working Knowledge: Python, MATLAB, JavaScript, HTML

Basic Knowledge: C++, C, GLSL/HLSL, TensorFlow, Java, SQL, C#, Assembly Language

## PUBLICATIONS & TALKS

- Abstract titled 'Visual perception of surface properties through direct manipulation' published for VSS-2021 (Vision Science Society). Recipient of Elsevier/Vision Research Virtual Travel Award for 2021.
- Paper titled 'Visual Perception of Surface Properties Through Manipulation' accepted for 29th Color and Imaging Conference.
- Paper titled 'A Practitioner's guide to Fringe Projection Profilometry' published in Archiving-21.
- Course titled 'Measuring, modeling and rendering surface appearance' offered in Archiving-21 with Dr. James Ferwerda.
- Paper titled 'A Web-based Visualization Tool for Multispectral Images' published in Electronic Imaging - 2021.
- Abstract titled 'A simple web-based tool for multi-spectral and topographical visualization' published in SPIE Defence + Commercial Sensing - 2021.
- Presented 'Measuring, Modeling, and Visualizing Surface Appearance' with Dr. James Ferwerda in IS&T Color & Imaging Conference Webinar 2020.
- Abstract titled 'Digital Modeling Of Cultural Heritage Objects' published in Frameless Journal 2019.
- Paper titled 'Feature Extraction from Microwave Image from Backscatter Coefficient' published in IEEE International Conference (ICIC) - 2015.

## PROJECTS

*Realistic Digital Modeling & Visualization of cultural heritage objects*

Python, MATLAB, C#

Working on developing a system capable of capturing surface topography along with the material properties to construct a realistic digital model of planar cultural heritage objects such as paintings and manuscript.

*Tools for Multispectral Visualization*

Three.js, Python

Working on developing Web-based tools for simultaneous visualization and analysis of multispectral and multimodal data.

*Visual perception of surface properties through direct manipulation*

Three.js, HTML, Python

Developing a series of psychophysical experiments to understand how the dynamic visual patterns are coded to provide information to perceive changes in shape or material of the object.

*Lightweight & real time capturing & rendering scene illumination*

JavaScript, HTML, Python

Developed an application to capture user's real time illumination environment and use it to render an object in the virtual scene on mobile devices. The effect of change in illumination in user's environment is reflected in the virtual scene.

*OCR on curved surfaces*

Python, Tensorflow

Worked on applying deep learning to recognize text from randomly curved surfaces. The motivation is to use it as an application to aid shoppers in automatic nutrition and price comparison of products.

*Feature Extraction from microwave images using backscatter coefficient* Python  
Studied microwave images and extracted features from the data by segmentation after increasing PSNR from 17 to 21.46

*2D Scene reconstruction in computer graphics using only primitives* C++, GLSL  
Reconstructed a given 2D complex scene in 3D using only primitives such as a triangle, cone, rectangle and sphere.

*Ray Tracer* Python  
Implemented a global illumination renderer based on Whitted style basic ray tracing.