Snehal Padhye

585-360-9111 | snehalpadhye.github.io | sp1471@rit.edu

Education

Doctor of Philosophy, Imaging Science — Aug. 2018 – Present
Rochester Institute of Technology — *Rochester, NY*

Master of Technology, Signal Processing — Aug. 2013 – May 2015
College of Engineering Pune — *Pune, India*

Work Experience

Apple — Sunnyvale, CA
PPO Hardware Engineering Intern, Display Exploration team — *May 2022 – Aug 2022*

- Modified components in the rendering pipeline to enable simulation and exploration of volumetric effects for prototype displays.
  - Developed an application to demonstrate the volumetric effects within the framework and conducted psychophysical experiments to evaluate the effects of the algorithm.
  - Generated ground truth data generation for deep learning based model of the algorithm.
  - Contributed in optimization of the algorithm.

Facebook Reality Labs — Redmond, WA
Research Intern, AR Display Engineering team — *May 2021 – Sept 2021*

- Developed 'AR Simulator' to determine product specifications and inform engineering requirements.
  - Evaluated the display pipeline feasibility of a Unity simulation and simulated key components usable for Oculus link and standalone HMD device.
  - Augmented existing simulations to the AR display pipeline components for a more realistic experience of the product.

Rochester Institute of Technology — Rochester, NY
Graduate Research Assistant, Visual Imaging and Technology Lab — *Aug. 2019 – Present*

- Develop an end-to-end solution for creating realistic experiences of the near planar cultural heritage objects.
  - **Capturing and Modeling** : Develop a lightweight appearance capture system for near planar objects.
  - **Visualization** : Develop a web-based tool for visualization of the captured digital models.
  - **Interaction** : Develop techniques to render the digital models using the user's real time environment.
  - **Perception** : Create tools to help us understand material perception using the tangible display system.

Publications

- Padhye, S., Messinger, D. and Ferwerda, J., 'SVBRDF estimation using a normal sorting technique', **SIGGRAPH** Poster Session (2022) and Journal of Imaging Science and Technology (**JIST**) (2022).
- Padhye, S. and Ferwerda, J. 'Real-time illumination capture and realistic rendering on mobile devices', **Frameless** Journal (2021).
- Padhye, S., et al., 'Visual perception of surface properties through direct manipulation', **VSS** (2021). Recipient of **Elsevier Vision Research Virtual Travel Award**.
- Ferwerda, J. and Padhye, S.,'Visual Perception of Surface Properties Through Manipulation', **Color and Imaging Conference (CIC)** (2021).
- Padhye, S., Messinger, D. and Ferwerda, J., 'A Practitioner's guide to Fringe Projection Profilometry', **Archiving** (2021).
- Padhye, S., Messinger, D. and Ferwerda, J., 'A Web-based Visualization Tool for Multispectral Images', **Electronic Imaging** (2021) and **SPIE** Defence + Commercial Sensing (2021).
- Padhye, S., Messinger, D. and Ferwerda, J., 'Digital Modeling Of Cultural Heritage Objects', **Frameless** (2019).

Technical Skills

Working Knowledge: Python, Unity, Three.js, MATLAB, JavaScript, HTML, GLSL/HLSL
Basic Knowledge: C/C++, C#, PyTorch, TensorFlow, Java
Courses completed: Image Processing and Computer Vision, Radiometry, The Human Visual System, Optics for Imaging, Foundation of Computer Graphics, Global Illumination