

Dhawal Sirikonda

✉ dhawal.sirikonda@research.iiit.ac.in

🐦 @dhawal1939

🌐 <http://dhawal1939.github.io/>

Education

- Jan. 2020 – Present 📖 **M.S. Computer Science by Research, IIIT-H** in Computer Graphics and Vision.
CGPA: 8.7
- Sept. 2019 – Dec. 2019 📖 **M.Tech, Computer Science, IIIT-H**
CGPA: 8.2 (discontinued and took-up Research Program)
- Sept. 2014 – May 2018 📖 **B.Tech JNTUK-UCEV** in Computer Science and Engineering
Percentage: 81.85, Rank:2

Research

- 1 **Dhawal, S., Aakash, K., & Narayanan, P. J.** (2022). Transfer Textures for Fast Precomputed Radiance Transfer. In B. Sauvage & J. Hasic-Telalovic (Eds.), *Eurographics 2022 - posters*. 📄 doi:10.2312/egp.20221012
- 2 Pulkit, G., Aakash, K., **Dhawal, S.**, Parikshit, S., & Narayanan, P. J. (2021). Appearance editing with free-viewpoint neural rendering. arXiv: 2110.07674
- 3 Pulkit, G., Aakash, K., **Dhawal, S.**, & Narayanan, P. J. (2021). Neural view synthesis with appearance editing from unstructured images. In *Proceedings of the twelfth indian conference on computer vision, graphics and image processing*. 📄 doi:10.1145/3490035.3490299

Research Projects

- Sept. 2021 - Dec. 2021 📖 **Exploring Precomputed Radiance Transfer** - Work Accepted as Poster at EG-2022
In this work, we have explored how decoupling of the Rendering equation works using Spherical Domain transformations (specifically Spherical Harmonics). We have tested and tried different *transfer* (which accounts for visibility) storage techniques in various spaces (Vertex Attrib., UV-map Textures, etc). We have incorporated the baked *inter-reflections* into PRT with lesser memory budgets in texture-space.
- Jan. 2021 – Jul. 2021 📖 **Appearance-Editing** - Part of this work was accepted at ICVGIP-2021
In this work, we have tried disentangling albedo from images. We employed a differentiable rendering pipeline to separate the albedo. The Visibility and Lighting have been accounted for, using the Spherical Harmonic representations. The work can be seen as an extension of DNR while accommodating the appearance editing. We proposed two pipelines one of which was accepted at the ICVGIP-2021.

Skills

- Coding 📖 C, Python, Pytorch, Mitsuba2, \LaTeX , OpenGL, GLSL
- Misc. 📖 Academic research, teaching

Achievements and Certifications

- 2018 📖 **Enlisted in Roll of Honors**, Academically 2nd in the batch of 2014-2018, JNTUK-UCEV
- 2017 📖 **Certified Programmer in building Systems and Applications**. MissionRnD

Other Projects

Sept. 2020 – Dec. 2020

- **Unity AR system with SH lighting in AR** - Work done as part of Adv. Graphics, AR and VR course
In this work, we created a simple system, which assumes screen space as an environment and projects it into SH-domain creating a Lighting representation. We added simple synthetic objects into the scene and observed basic changes in lighting affected by variation in the environment.

Jan. 2020 – Jul. 2020

- **Image-Impainting** - Work done as part of Computer Vision course
In this work, we have implemented and experimented with *Image-Impainting using Context-Encoders* proposed by [Pathak et al. 2016]. We also experimented with various variants of the context-encoder, playing around with different publicly available datasets. We observed that the method performs best in the images with recurring patterns e.g, walls and windows of buildings while failing to obtain plausible results in case of Animal and Human Images.

Oct. 2019 - Dec. 2019

- **Slab Allocator** - Work done as part of Operating Systems Course
In this work, we have simulated *Slab allocator*(a type of memory allocator) proposed by [Bonwick et al. 1994], which helps reduce the latency of varied page-size accesses made to the kernel by different processes. We employ dynamic slabs based on the requests made by the processes in a given time frame. The method maintains a table for book-keeping, allowing allocation and de-allocation of memory on demand.