AMAN AGARWAL

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EDUCATION

BROWN UNIVERSITY   Providence, RI
Master of Science in Computer Science   September 2024 - Present
Relevant Coursework: Computer Vision , Introduction to Computer Graphics

SRM INSTITUTE OF SCIENCE & TECHNOLOGY   Tamil Nadu, India
Bachelor of Technology   August 2020 – May 2024
Major in Computer Science; Minor in Software Engineering
GPA: 9.31/10.0 ; Scholarship for Academic Excellence 2020-21
Relevant Coursework: Probability & Statistics, Linear Algebra ; Advanced Calculus; Machine Learning & Applications

EXPERIENCE

INDIAN INSTITUTE OF SCIENCE   Bangalore, India
Research Intern   Jan 2024 – June 2024
- Collaborated with PhD researchers in analyzing inverse rendering methodologies by conducting ablation studies to evaluate each method's impact
- Investigated Gaussian Splatting techniques, employing parallel neural networks for inferring sparse images without prior depth

STANFORD VISION LAB   Stanford, CA
Research Intern   Oct 2023 – Jan 2024
- Integrated NeRF-Capture, an application that estimates poses using Apple's AR-Kit API while capturing photos, with Zip-NeRF, cutting COLMAP processing time by over 50% and speeding up the overall pipeline
- Researched Zip-NeRF on dense-sampled iPhone datasets to understand the appearance of floating clouds in low precision camera-based NeRFs and evaluate the need for Camera Preconditioning methods

PROJECTS

RAY TRACER ON APPLE SILICON   August 2024
- Developing a Ray Tracer from scratch built entirely on Apple Silicon's MLX Library for on-GPU processing
- Implementing various Computer vision and graphics techniques from scratch.

LOVING VINCENT   March 2022
- Developed a Neural Style Transfer model to efficiently apply feature transformations on video frames, providing a method for creating visually appealing videos with artistic styles and smooth frame-rates for better visualization
- Produced an automated system to perform custom feature transfers, resulting in an impression of moving paintings

RESCUE-SHARK   March 2022
- A web-application based SOS community for truck drivers made out of WhatsApp API, dissipating emergency requests
- Winner of SharkHacks3 Hackathon for "Most Creative Use of Twilio"

ACTIVITIES

NEXT TECH LAB   Tamil Nadu, India
Head of AI/ML Research Division   Sep 2020 – May 2024
- Interviewed and managed a team of 30+ sophomore researchers, overseeing their projects and ensuring their success
- Oversaw the lab's research projects, which included over 25 machine learning projects and 15 other research projects, and executed over 20+ events and workshops, ranging from sessions to hackathons

ADDITIONAL

Interests : Data Science, Inverse Rendering, Computer Vision, Computer Graphics, Statistical Learning, Cinema
Languages : Python3, C/C++, Bash, CMake, JavaScript
Libraries & Frameworks: JAX, MLX, TensorFlow Keras, PyTorch, PyTorch 3D, NumPy