Aman Agarwal

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EDUCATION

Brown University, *M.Sc. Computer Science*   Providence, RI | **Sept. 2024 - May 2026**
Relevant Courses**:** Computer Graphics, Computer Vision, Computer Vision for Graphics & Interaction
SRM University, *B.Tech. Computer Science,* GPA: 3.98/4.0   Tamil Nadu, India | **Sept. 2020 - May 2024**
Scholarship for Academic Excellence ; Top 1 percentile of cohort (2021)

RESEARCH EXPERIENCE

Indian Institute of Science, *Project Assistant Intern*   Bangalore, India | Jan. 2024 – May 2024
- Developed methodologies to improve the performance of novel view synthesis frameworks on sparse images
- Conducted ablation studies on research projects aiding and accelerating paper publication by over 3 weeks
- Delivered benchmark studies on novel frameworks before-time, centering out over 5 essential improvements in the paper

Stanford University, *Research Engineering Intern*   Stanford, CA | Oct. 2023 – Jan. 2024
- Integrated Apple's ARKit API with 3D reconstruction pipelines to replace COLMAP, decreasing processing time by 50%
- Researched on techniques to improve Neural Radiance Fields methods by introducing dense-sampling and eliminating over 100% of floater artifacts in results.

LEADERSHIP EXPERIENCE

Next Tech Lab, *Head of AI Operations and Research*   Tamil Nadu, India | Sept. 2022 - May 2024
- Recruited a team of over 50+ undergrad researchers in a span of over 2 years, guiding them to conduct novel research
- Hosted over 20+ talks, 5 hackathons and 3 research seminars, contributing significantly to the research culture
- Aided over 10+ students in securing research and industry internships, providing guidance throughout recruitment process

VISION, GRAPHICS AND ML PROJECTS

Positional Encoding on Neural Fields, *Brown Visual Computing*   Summer 2024
- Implemented 5 different input encodings to train neural networks on images and compared accuracy and performance
- Reproduced techniques to compress and store images into weights of neural networks with over 90% accuracy and 80% compression rates

Neural Radiance Fields but Voxels   Fall 2023
- Tweaked the vanilla Neural Radiance Fields paper by replacing output function with voxels
- Replaced functions and object types to ones that support non-CUDA systems such as Apple Metal

Cancer Cell Growth in Carbon Nanotubes, *Xu Lab at Carnegie Mellon University*   Fall 2023
- Predicted possible cancer growth regions by analyzing depth maps of carbon nanotubes
- Provided a statistical analysis of their growth sizes

Ray Tracer on Apple Metal   Fall 2023
- Developed a classic ray tracer and used PyTorch to utilize Apple's Metal pipeline.

Loving Vincent   Summer 2022
- Applied feature transformations on videos using Neural Style transfer, creating an illusion of moving painting frames

SKILLS & INTERESTS

Research: Computer Vision, Computer Graphics, Machine Learning, Neural Radiance Fields, Gaussian Splatting, Inverse Rendering, Data Science,
Technical : Python3, C++, Bash, JavaScript
Libraries & Frameworks: PyTorch, TensorFlow, JAX, MLX, PyTorch3D