AMAN AGARWAL

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EDUCATION

Brown University | Master of Science in Computer Science | *Advisor: Dr. James Tompkin* — Providence, RI
GPA: 4.0/4.0; Relevant Coursework: 3D Vision and Machine Learning, Computer Graphics — Sep 2024 – May 2026

SRM University | Bachelor of Technology in Computer Science & Engineering — Tamil Nadu, India
CGPA: 9.31/10.0; Academic Scholarship 2020-2021 — Sept 2020 – May 2024

PROFESSIONAL EXPERIENCE

Brown Visual Computing — Providence, RI
Graduate Researcher — Jan 2025 – Present

- Assisted in developing benchmark for novel view synthesis of videos using various Dynamic Gaussian Splatting techniques.

Indian Institute of Science & Technology — Bangalore, India
Computer Vision & AI Research Intern — Jan 2024 – May 2024

- Optimized novel view synthesis methods for sparse low quality image datasets by integrating monocular depth priors & other physics-based constraints, improving SSIM & PSNR metrics by 15%.
- Conducted 3+ ablation studies, streamlining research workflows & reducing publication timelines by 3 weeks.
- Delivered benchmark analyses for 5+ research papers, accelerating identification of key improvements.

Stanford University — Stanford, CA
Computer Vision & Machine Learning Engineer Intern — Oct 2023 – Jan 2024

- Replaced traditional pose estimation methods with Apple's advanced camera hardware for pose computation, integrating it into the 3D reconstruction pipeline and reducing total pipeline time by 40%.
- Introduced and applied dense sampling techniques in the 3D reconstruction pipeline, significantly improving reconstruction quality and reducing errors by nearly 90%.

MACHINE LEARNING, VISION & GRAPHICS PROJECTS

Courses - LLM | *https://github.com/maxboonban/cabAI* — Jan 2025

- Designed a smart chatbot powered by a Retrieval-Augmented Generation (RAG) framework to assist college students in selecting courses tailored to their career interests and prior knowledge, reducing course search time from hours to minutes.

Volumetric Rendering for Clouds | *https://github.com/aman190202/Clouds* — Dec 2024

- Engineered a ray-marching algorithm in C++ to render volumetric cloud data, delivering realistic real-time outputs with a 200% improvement in rendering speed using OpenMP.
- Integrated multi-light source simulation, enabling accurate light attenuation and realistic interactions with cloud volumes, enhancing visual fidelity by 50%.

Neural Radiance Fields | *https://github.com/aman190202/small_NeRF* — Dec 2024

- Built a Neural Radiance Field pipeline from scratch to synthesize novel 3D views, achieving state-of-the-art accuracy on synthetic benchmarks.

LEADERSHIP EXPERIENCE

Next Tech Lab — Tamil Nadu, India
Head of AI/ML Operations — May 2022 – May 2024

- Recruited & led a team of over 50+ undergraduate researchers over 2 years.
- Organized over 20+ talks, 5 hackathons, and 3 research seminars, fostering a vibrant research culture.
- Mentored 10+ students, assisting them in securing research and industry internships by providing recruitment guidance.