KUNAL GUPTA

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EDUCATION

University of California San Diego, La Jolla, CA
Ph.D. Computer Science (3D Vision and Graphics — Qualcomm Innovation Fellow) Sept. 21 - Present
M.S. Computer Science — GPA: 3.68/4.0 Sept. 18 - June 20

Birla Institute of Technology and Science, Pilani, India
B.Eng. Electrical and Electronics Engineering — GPA: 8.8/10.0 Aug 14 - May 18

PUBLICATIONS

1. Gupta, K., Mehta, I., ... , Ramamoorthi R., Chandraker, M. "SceneProg: Program Synthesis for 3D Scene Generation using LLMs" Under Submission 2024
2. Gupta, K., Hasan, M., Xu, Z., Luan, F., Sunkavalli, K., Sun, X., Chandraker, M. & Bi, S. "MCNeRF: Monte Carlo Rendering and Denoising for Real-Time NeRFs." SIGGRAPH ASIA 2023
3. Aigerman, N., Gupta, K., Kim, V., Saito, J., Chaudhuri, S., Groueix, T., "Neural Jacobian Fields: learning Intrinsic Mappings of Arbitrary Meshes." SIGGRAPH 2022
4. Gupta, K., Chandraker, M. "Neural Mesh Flow: 3D Manifold Mesh Generation via Diffeomorphic Flows." NeurIPS 2020 (Spotlight - 4.1% acceptance rate)

RESEARCH EXPERIENCE

Adobe Research
Research Intern with Kalyan Sunkavalli June 22- Sept. 22

· Researched framework to accelerate rendering of *arbitrary* NeRFs via Monte Carlo sampling and denoising
· Developed method showed real-time performance with 7× speedup over TensoRF on commodity hardware

Centre for Visual Computing, UC San Diego, CA
Research Assistant with Prof. Manmohan Chandraker Jan. 19 - Present

· Researching inverse rendering via large language models (LLMs) and visual foundation models (VFMs)
· Improved 3D mesh reconstruction quality by 50 times over existing methods through researching a novel deep learning algorithm: *"Neural Mesh Flow"* - that leverages NeuralODEs for learning shape diffeomorphism

Adobe Research
Research Intern with Vladimir Kim May 21 - Sept. 21

· Researched detail preserving mesh deformation that leverages gradient domain prediction using deep learning.
· Developed method allows interactive rate deformation of (1M+) tetra-meshes – 1000x faster than prior art.

NVIDIA Research
Research Intern with Stan Birchfield March 21 - May 21

· Researched differentiable iso-surface extraction of implicit functions to generate guaranteed manifold meshes
· Developed a novel algorithm for 3D manifold mesh generation of arbitrary topology

SKILLS

Languages C, C++, Python
Tools Pytorch, Git, Linux, Docker