

Ashish Sinha

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HomePage | Linkdin | GitHub | Google Scholar | Need O1/EB1/EB2 visa sponsorship in US

RESEARCH INTERESTS

Scene Understanding | 3D Reconstruction | Neural Rendering | Generative Modeling | Medical Image Analysis

EDUCATION

Simon Fraser University <i>Master's in Computer Science Advisor(s): Prof. Ghassan Hamarneh</i>	Nov. 2021 – Jun. 2024 Burnaby, BC, Canada
Indian Institute of Technology Roorkee <i>Bachelor's in Materials Science Advisor(s): Prof. K.S. Suresh</i>	Jul. 2016 – Jul. 2020 Roorkee, India

RESEARCH EXPERIENCE

Machine Learning Researcher <i>Noah's Ark Lab Advisor: Tongtong Cao</i>	Jul. 2024 – Present Toronto, ON, Canada
<ul style="list-style-type: none">Finetuned foundation models (FM) to improve open-vocabulary object detection by 32%.Designed and implemented zero-shot 6D pose estimation algorithms using 2D/3D FMs running at 4 FPS.Working on improving perception of robots in the Embodied AI setting.	
Graduate Research Assistant <i>Simon Fraser University Advisor: Ghassan Hamarneh</i>	Nov. 2021 – Aug 2024 Burnaby, BC, Canada
<ul style="list-style-type: none">Proposed a novel diffusion-based algorithm for generating anatomical trees using neural fields. [MICCAI]Created a differential rendering framework to generate large-scale synthetic clinical data. [MedIA]	
Research Intern <i>GIST Vision Lab Advisor: Jonghyun Choi</i>	Dec. 2020 – Aug. 2021 Gwangju, South Korea
<ul style="list-style-type: none">Developed a novel algorithm for multi-target point cloud domain adaptation. [CVPR (W)]	
Research Intern <i>Preferred Networks Advisors: Yohei Sugawara & Yuichiro Hirano</i>	Jun. 2019 – Aug. 2019 Tokyo, Japan
<ul style="list-style-type: none">Designed VQ-Guided Attention GANs for improving the CT reconstruction from biplanar DRRs. [NeurIPS (W)]	
Research Intern <i>ETS Montreal Advisor: Jose Dolz</i>	Jun. 2019 – Aug. 2019 Montreal, Canada
<ul style="list-style-type: none">Designed a novel attention module for Semantic Segmentation of abdominal region. [JBHI]	

SELECTED PUBLICATIONS

- “*TrIND*: Representing Anatomical Trees by Denoising Diffusion of Implicit Neural Fields”, **A. Sinha**, G. Hamarneh. MICCAI, 2024.
- “*DermSynth3D*: Synthesis of *in-the-wild* Annotated Dermatology Images”, **A. Sinha**, J. Kawahara, A. Pakzad, ..., G. Hamarneh. MedIA, 2024.
- “*MEnSA*: Mixup Ensemble Average for Multi Target Domain Adaptation on Point Clouds”, **A. Sinha**, J. Choi. CVPR (W), 2023.
- “Multi-Scale Self-Guided Attention Networks for Medical Image Segmentation”, **A. Sinha**, J. Dolz. JBHI, 2020.
- “*GAGAN*: CT Reconstruction from Biplanar DRRs using GAN with Attention”, **A. Sinha**, Y. Hirano, Y. Sugawara. NeurIPS (W), 2019.

HONORS & AWARDS

- Multiple graduate scholarships at SFU (Ralph M Howatt, DBMiner, Backwater/Jost).
- Bronze medal in PetFinder.my Adoption Challenge hosted on Kaggle.

SKILLS

Programming Languages: Python, C++, MATLAB, SQL
Developer Tools: PyTorch, JAX, Docker, Git, nVIM, Blender, Tableau