

Ashish Sinha

ashishsinha108@gmail.com | +1 (604) 710-7197 | Toronto, Canada
HomePage | LinkedIn | GitHub | Google Scholar | Need O1/EB1/EB2 visa sponsorship in US

EDUCATION

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

RESEARCH EXPERIENCE

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| Machine Learning Researcher <i>Noah's Ark Lab Advisor: Tongtong Cao</i> | Jul. 2024 – Present <i>Toronto, ON, Canada</i> |
| <ul style="list-style-type: none">Enhanced open-vocabulary object detection of small tableware objects by 32% via scalable training of vision foundation models (FM) for robotic manipulation.Designed a real-time zero-shot 6D pose estimation method using 2D/3D FMs.[Under Review (ICRA)]Developed sim-to-real motion planning pipelines for robotic manipulation using vision-language action models. [Patent pending] | |
| Graduate Research Assistant <i>Simon Fraser University Advisor: Ghassan Hamarneh</i> | Nov. 2021 – Aug 2024 <i>Burnaby, BC, Canada</i> |
| <ul style="list-style-type: none">Designed a novel diffusion-based algorithm for generating anatomical trees using neural fields. [MICCAI]Developed a differential rendering framework to generate large-scale synthetic clinical data. [MedIA]Worked on developing an ethics framework for medical image synthesis. [Under Review (MedIA)] | |
| Research Intern <i>GIST Vision Lab Advisor: Jonghyun Choi</i> | Dec. 2020 – Aug. 2021 <i>Gwangju, South Korea</i> |
| <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 <i>Tokyo, Japan</i> |
| <ul style="list-style-type: none">Developed a novel VQ-Guided Attention for GANs for CT reconstruction from DRRs. [NeurIPS (W)] | |
| Research Intern <i>ETS Montreal Advisor: Jose Dolz</i> | Mar. 2019 – Jul. 2019 <i>Montreal, Canada</i> |
| <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 fellowships 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
Frameworks: PyTorch, JAX, Taichi, Chainer, Keras
Utilities: Docker, Git, (n)VIM, SLURM, Blender, ManiSkill, L^AT_EX, Tableau, Meshlab