

# Adrish Dey

[adrishd.cse2017@nsec.ac.in](mailto:adrishd.cse2017@nsec.ac.in) | <https://captainpool.me>

Education:	<b>Netaji Subhash Engineering College (NSEC)</b> Bachelors of Technology in Computer Science and Engineering (with Honors) Kolkata, India	July 2017 - September 2021
Research Interests:	Geometric Deep Learning, Topological Data Analysis, Generative Models, Implicit Models	
Accepted Publications:	<ul style="list-style-type: none"><li>• <b>(Spotlight)</b> Topo Sampler: A Topology Constrained Noise Sampling for GANs; <b>Adrish Dey*</b>, Sayantan Das; NeurIPS 2020 Workshop on Topological Data Analysis and Beyond</li></ul>	
Research Presentations:	<ul style="list-style-type: none"><li>• <b>(Spotlight Talk)</b> Topo Sampler: A Topology Constrained Noise Sampling for GANs; To appear at NeurIPS 2020 Workshop on Topological Data Analysis and Beyond</li></ul>	
Research Service:	<ul style="list-style-type: none"><li>• Reviewer at ICLR 2021 Workshop on Geometry and Topology in Representation Learning</li></ul>	
Research Experience:	<b>Bachelors Thesis</b> <b>Title:</b> Discrete Non-Euclidean Convolutions <b>Mentored By:</b> <i>Dr Bastian Rieck (ETH Zurich), Prof. Shilpi Bose (NSEC)</i>	February 2021 - Present
	<b>Massachusetts Institute of Technology (MIT)   CSAIL</b> <b>Mentored By:</b> <i>Prof. Justin Solomon (MIT)</i> <ul style="list-style-type: none"><li>• <b>Summer Geometry Institute Fellow</b>, Geometric Data Processing Group</li></ul>	July 2021 - August 2021
	<b>Independent Research   Remote</b> <b>Mentored By:</b> <i>Dr Bastian Rieck (ETH Zurich)</i> <ul style="list-style-type: none"><li>• Studied Disconnected Manifold Learning in GANs, using Persistent Homology.</li><li>• Implemented Experiments, Authored a NeurIPS Workshop Submission.</li></ul>	September 2020 - October 2020
	<b>Opaltech.ai   Remote</b> <b>Mentored By:</b> <i>Dr. Shahrouz Ryan Alimo (NASA Jet Propulsion Lab)</i> <ul style="list-style-type: none"><li>• Researched and Implemented a RGBD SLAM based 3D Scene Reconstruction Framework.</li><li>• Implemented a Ray Tracing based Simulator for Synthetic data Generation</li></ul>	May 2020 - August 2020
	<b>Rephrase.ai   Bangalore, Karnataka, India</b> <ul style="list-style-type: none"><li>• Designed a data pre-processing unit, for stream lining audio-splitting / filter-bank generation.</li><li>• Researched and Implemented a sparsity-optimized version of a hessian-free second-order optimizer.</li><li>• Contributed to GAN driven domain translation of face expressions.</li></ul>	December 2019 - February 2020
Open Source:	<b>Google Summer of Code (TensorFlow)</b> <b>Mentored By:</b> Sachin Joglekar (Google), Vojtech Bardiovsky (Google) <ul style="list-style-type: none"><li>• Implemented ESRGAN (<a href="https://arxiv.org/abs/1809.00219">https://arxiv.org/abs/1809.00219</a>) and published the trained model to TensorFlow Hub: <a href="https://tfhub.dev/captain-pool/esrgan-tf2/1">https://tfhub.dev/captain-pool/esrgan-tf2/1</a> (<b>OVER 2K+ Downloads</b>)</li><li>• Implemented GAN Distillation Framework for ESRGAN generator. Achieved <b>~628x compression factor</b> with minimal drop in reconstruction quality. Capable of running <b>near-real-time</b> video frame super resolution on Pixel 3 CPU (<a href="https://github.com/captain-pool/GSOC/tree/master/E3_Streamer">https://github.com/captain-pool/GSOC/tree/master/E3_Streamer</a>)</li><li>• Added Support for displaying AutoGraphed tf.functions, with TensorFlow saved_model_cli (<a href="https://github.com/tensorflow/tensorflow/pull/30752">https://github.com/tensorflow/tensorflow/pull/30752</a>)</li></ul>	May 2019 - August 2019