

# Abhishek Sinha

abhishek.sinha94@gmail.com | 650.709.5501 | a7b23.github.io | Google Scholar

## INTERESTS

COMPUTER VISION, ACTIVE  
LEARNING, SELF-SUPERVISED  
LEARNING, ANOMALY DETECTION,  
GENERATIVE MODELS

## EDUCATION

### STANFORD UNIVERSITY

MS IN COMPUTER SCIENCE

Sept. 2019 - June 2021

Cum. GPA: 4.13/4.0

### IIT KHARAGPUR

BTECH IN E & ECE

2013-2017 | Kharagpur, India

Minor in Computer Science

Cum. GPA: 9.63 / 10.0

Minor Cum. GPA: 9.8 / 10.0

## COURSEWORK

### GRADUATE

CS 221, CS 231N, CS 236, CS 234, CS  
224N, CS 271

### UNDERGRADUATE

Deep Learning

Data Structures and Algorithms

## ACHIEVEMENTS

### YOUNG ENGINEER AWARD

Won the Outstanding Young Engineers  
Award at Adobe Inc.

### ADOBE MAX

My work on image synthesis was  
showcased on stage at Adobe MAX,  
2019.

### WINNER OF AI HACKATHON

Winner of the Microsoft AI Hackathon  
competition held at IIT Kharagpur.

## SKILLS

Python • C • C++

TensorFlow • PyTorch • Caffe

OpenCV • Scikit-learn • Numpy

## POSITIONS

REVIEWER FOR NEURIPS 2021,

ICLR 2022

COURSE ASSISTANT, CS 330

## EXPERIENCE

### WAYMO LLC | SOFTWARE ENGINEER

June 2021 - Present | Mountain View, USA

- Working on internal tools for data mining and understanding.

### WAYMO LLC | PERCEPTION RESEARCH AND DEVELOPMENT INTERN

June 2020 - September 2020 | Mountain View, USA

- Implemented various active learning algorithms for 3D detection of vehicles and pedestrian over Waymo Open Dataset.

### STANFORD UNIV. | RESEARCH ASSISTANT UNDER STEFANO ERMON

January 2020 - Present | Stanford, USA

- Worked towards improving generative models and representation learning models, and also using them for anomaly detection.

### ADOBE | SOFTWARE DEVELOPMENT ENGINEER-2

June 2017 - August 2019 | Noida, India

- Worked on a deep learning based visual search product for apparels which accepts images, segments them and then recommends related desired products.

### ADOBE | INTERN

May 2016 - July 2016 | Noida, India

- Developed a system to accelerate training of neural networks.

## SELECTED PUBLICATIONS

### COMPARING DISTRIBUTIONS BY MEASURING DIFFERENCES THAT AFFECT DECISION MAKING ORAL | ICLR, 2022

- Proposed a way to measure the discrepancy between two probability distributions based on optimal decision loss.
- Our approach outperformed prior approaches for two-sample tests.

### D2C: DIFFUSION-DENOISING MODELS FOR FEW-SHOT CONDITIONAL GENERATION | NEURIPS, 2021

- Improved the representation learning and generation abilities of VAE via contrastive loss and strong prior using diffusion models respectively.
- The model outperformed state-of-the-art VAE and diffusion models for few-shot conditional image generation tasks.

### NEGATIVE DATA AUGMENTATION | ICLR, 2020

- Proposed a new training objective for GAN and contrastive learning approaches using negative data augmentation.
- Achieved significant improvement in conditional/unconditional image generation and representation learning over images and videos.

### INTROSPECTION: ACCELERATING NEURAL NETWORK TRAINING BY LEARNING WEIGHT EVOLUTION | ICLR, 2017

- Developed an algorithm to speed up training of deep neural networks by predicting future weight values.

### CHARTING THE RIGHT MANIFOLD: MANIFOLD MIXUP FOR FEW-SHOT LEARNING | WACV 2020

- Used self-supervision techniques - rotation and exemplar, followed by manifold mixup for few-shot tasks.

### POWERING ROBUST FASHION RETRIEVAL WITH INFORMATION RICH FEATURE EMBEDDINGS | BEST PAPER AWARD AT CVPR

WORKSHOP, 2019

- Proposed a grid based training of siamese networks, allowing it to observe multiple positive and negative image instances simultaneously.