

ANUBHAV JAIN

aj3281@nyu.edu \diamond <https://engineering.nyu.edu/anubhav-jain>

Hyperlinks in blue color at appropriate places

EDUCATION

[New York University \(NYU\), NY](#)

Sept 2021 - Present

Ph.D in Computer Science

CGPA: 4.0/4.0

Supervisors: [Dr. Nasir Memon](#), [Dr. Julian Togelius](#)

[Indraprastha Institute of Information Technology \(IIIT\), Delhi](#)

Aug 2015 - Aug 2019

B.Tech (Honors) in Electronics and Communication Engineering

CGPA: 8.36/10 (Top 10%)

CURRENT RESEARCH

I am exploring problems in Responsible AI where I am trying to make generative models fairer and more privacy preserving using little to no training data.

SELECTED PUBLICATIONS

[\[Google Scholar\]](#)

* Denotes equal contribution

A. Jain, R. Dholakia, N. Memon, J. Togelius, “[Zero-shot demographically unbiased image generation from an existing biased StyleGAN](#)”. Preprint, 2023

A. Jain, N. Memon, J. Togelius, “[Fair GANs through model rebalancing using synthetic data](#)”. Preprint, 2023

A. Jain, N. Memon, J. Togelius, “[Zero-shot racially balanced dataset generation using an existing biased StyleGAN2](#)”. In: International Joint Conference on Biometrics (IJCB) 2023 (**Oral, Invited to Special Issue of IEEE Transactions on Biometrics.**)

A. Jain, N. Memon, J. Togelius, “[A DataLess FaceSwap Detection Approach Using Synthetic Images](#)”. In: International Joint Conference on Biometrics (IJCB) 2022

P. Korshunov, **A. Jain**, S. Marcel. “[Custom Attribution Loss for Improving Generalization and Interpretability of Deepfake Detection](#)”. In: IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2022

M. Marras, P. Korus, **A. Jain**, N. Memon “[Dictionary Attacks on Speaker Verification](#)” In. IEEE Transactions on Information Forensics and Security (TIFS) 2022.

A. Jain, P. Korshunov, S. Marcel. “[Improving Generalization of Deepfake Detection by Using Attribution Models](#)”. In: IEEE Multi-Media Signal Processing (MMSP) 2021 (**Best paper nominee**)

A. Jain, K. Abedinpour, O. Polat, et al. “[Voice Analysis for Distinguishing ON from OFF Motor State in People with Parkinson’s Disease](#)”. In: Frontiers Journal in Human Neuroscience, section Speech and Language.

A. Jain*, P. Majumdar*, R. Singh, M. Vatsa. “[Detecting GANs and Retouching based Digital Alterations via DAD-HCNN](#)”. In: Conference on Computer Vision and Pattern Recognition (CVPR) Workshop on Media Forensics, 2020.

A. Jain, R. Singh, and M. Vatsa. “[On Detecting GANs and Retouching based Synthetic Alterations](#)”. In: 9th IEEE International Conference on Biometrics: Theory, Applications and Systems (BTAS), 2018.

A. Kumar*, S. Balodi*, **A. Jain*** and P. Biyani. “[Benchmark Dataset for Timetable Optimization of Bus Routes in the City of New Delhi](#)”. In: 23rd IEEE Intelligent Transportation Systems Conference (ITSC), 2020.

P. Sahay, **A. Jain**, P. Radhakrishna, V. Gadre. “[Parameter Estimation and Imaging of SAR Ground Moving Target using AGFS](#)”. In: IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT) 2021.

RELEVANT WORK EXPERIENCE / INTERNSHIPS

[Dataminr](#)

May 2022 - Aug 2022

Research Scientist Intern, Supervisor: [Dr. Svebor Karaman](#)

NY, USA

- Research on multimodal deepfake detection.

Biometrics Security & Privacy Group, Idiap Research Institute

Research Trainee, Supervisor: *Dr. Sébastien Marcel*

Oct 2020 - Aug 2021

Martigny, Switzerland

- Research on improving generalization of deepfake detectors.

Pixxel

Data Scientist

Sept 2020 - Oct 2020

Bangalore, India

- Proposed novel patch-based hierarchical clustering algorithm for segmentation of low-resolution remote sensing imagery.

Digital Product School, Center for Business Creation and Innovation at Technical University of Munich

Artificial Intelligence Engineer

Jan 2020 - March 2020

Munich, Germany

- Worked in a cross-functional team to ideate and develop digital products to help immigrants in Munich. Amongst the 8 students selected worldwide (Acceptance rate < 10%). We built an gamified AI-application to learn German.

Telstra: Global Business Services

Software Engineer

July 2019 - Dec 2019

Bangalore, India

- Worked on NLP applications - video calling with transcription, email classification and chatbots.

Indian Institute of Technology, Bombay

Research Intern, Supervisor: *Dr. Vikram M. Gadre*

May 2017 - July 2017

Mumbai, India

- Worked on removing motion blur in Synthetic Aperture Radar (SAR) imagery through parameter estimation (acceleration and velocity) of moving targets.

TECHNICAL SKILLS

Programming Skills

Python, C, MATLAB, PyTorch, Tensorflow, Git

Relevant Coursework

Machine Learning (ML), Foundations of ML, Statistical ML, Algorithmic ML and Data Science, Deep Learning, Computer Vision, Digital Image Processing, Linear Optimization, Robotics, Probability and Statistics, Data Structures and Algorithms, Advanced Programming

ACADEMIC ACHIEVEMENTS

NYU SOE Ph.D Fellowship

2021-2022

Dean's Innovation, Research and Development Award - IIIT, Delhi

2018

Awarded for my research work on detecting synthetic alterations.

AICTE-INAE Travel Grant - Indian National Academy of Engineering (INAE)

2019

Awarded 1400 USD to present my research paper at IEEE ITSC.

Certificate of Merit - Central Board of Secondary Education (CBSE)

2015

Awarded for outstanding academic performance and for being among the top 0.1 percent of successful candidates in class XII All India Senior Secondary Examinations.

Master Dheeraj Ghai Memorial Award - The Mother's International School

2015

Awarded for being the School Topper in Mathematics in class XII examinations.

OTHER PROJECTS

Forget and Relearn Paradigm in Deep Neural Network

2022

Guide: *Dr. Chinmay Hegde, Dr. Julian Togelius, Dr. Nasir Memon*

Improving GANs using pre-trained Discriminators

2021

Guide: *Dr. Rob Fergus*

Voice Analysis to Differentiate the Dopaminergic Response in Parkinson's Patients

2020

Guide: *Dr. Milos Cernak, Dr. Afsaneh Asaei*

Face recognition at a distance

2019

Guide: *Dr. Mayank Vatsa*

TEACHING/ MENTORING EXPERIENCE

STEM-Away

Machine Learning Project lead

*June 2020 - Present
California, USA (Remote)*

- Conducting technical sessions and training to guide and support ML interns.

IIT-Delhi

Teaching Assistant: Introduction to Engineering Design (DES130)

*Jan 2018 - April 2018
Delhi, India*

- Supervised 16 students for their course project. Conducted lab and tutorial sessions for 30 students.

IIT-Delhi

Teaching Assistant: Differential Equations (MTH204 - Maths IV)

*Jan 2019 - April 2019
Delhi, India*

- Conducted tutorial sessions for over 30 students. Graded and conducted weekly in-class tests.