

# ANUBHAV JAIN

PHD STUDENT AT NEW YORK UNIVERSITY

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## WORK EXPERIENCE

### Dataminr Inc.

New York City, USA

Research Scientist Intern · May 2022 to Aug. 2022

Research on multimodal deepfake detection.

### Biometrics Security & Privacy Group, Idiap Research Institute (Aff. EPFL)

Martigny, Switzerland

Research Trainee · Oct. 2020 to July 2021

- Research on improving generalization of deepfake detectors.
- Contributed to the open-source [Bob](#) image processing package.

### Digital Product School, UnternehmerTUM

Munich, Germany

Artificial Intelligence Engineer · Jan. 2020 to Mar. 2020

- Underwent training on cross-functional digital product development with emphasis on AI and Product Management.
- Research on speech analysis techniques with doctors to categorise the response of Dopaminergic into ON and OFF motor states in patients with Parkinson's disease.
- Investigated data mining models on scientific literatures to generate medical insights which would help doctors and researchers answer key questions related to Covid-19. Participated in the Kaggle - COVID-19 Open Research Dataset Challenge (CORD-19)

### Telstra: Global Business Services

Bangalore, India

AI Software Engineer · July 2019 to Dec. 2019

- Single-handedly developed an NLP based video calling application that converts speech to text in real-time.
- Worked with the Automation Communication Expert (ACE) Virtual Assistant team to develop a chatbot to assist field technicians.
- Worked on full-stack development of NLP based email classification pipeline as a part of the Cognitive Platform team.

### Indian Institute of Technology, Bombay

Mumbai, India

Research Intern · May 2017 to July 2017

- Worked on parameter estimation (acceleration and velocity) of moving targets as viewed from a Synthetic Aperture Radar (SAR).

## SELECTED PUBLICATIONS

- 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)
- 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, M. Caliskan, A. Asaei, S. Skodda, F. M.J. Pfister, U. Fietzek, M. Cernak. "[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, 2021
- A. Jain, P. Majumdar, R. Singh, M. Vatsa "[Detecting GANs and Retouching based Digital Alterations via DAD-HCNN](#)", Computer Vision and Pattern Recognition (CVPR) Workshop on Media Forensics, 2020 (Oral)
- A. Jain, R. Singh, M. Vatsa "[On Detecting Synthetic Alterations made using GANs and Retouching](#)", 9th IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS), 2018 (Oral)

## EDUCATION

### New York University · Current

PhD in Computer Science

CGPA: 4.0/4.0

### Indraprastha Institute of Information Technology-Delhi

Bachelor in Technology (Honors) 2019

CGPA: 8.36/10.0 (Top 10%)

## SKILLS

### PROGRAMMING LANGUAGES/ SOFTWARES:

Python, C/C++, Java, MATLAB, Javascript, Git/ Github, Google Cloud Platform, Linux, LaTeX

**ML PYTHON LIBRARIES:** Tensorflow, Keras, PyTorch, Scikit-learn, OpenCV, NLTK, Pandas, Scipy

## AWARDS & RECOGNITION

- **School Of Engineering Fellowship:** New York University
- **Dean's Innovation, Research and Development Award, 2018:** IIIT-Delhi
- **AICTE-INAE Travel Grant:** Indian National Academy of Engineering (INAE)
- **Certificate of Merit:** Central Board of Secondary Education (2015) - Top 0.1% of students in board examinations

## RELEVANT PROJECTS

Forget and Relearn Paradigm in Deep Neural Network · 2022

Improving GANs using pre-trained Discriminators · 2021

Synthetic Alteration (DeepFake) Detection · 2018

Voice Analysis to Differentiate the Dopaminergic Response in Parkinson's Patients · 2020

Timetable Optimization of Buses · 2018