

AATIF NISAR DAR

aatifnd@vt.edu

aatfnisar01.github.io , [Google Scholar](#) , [LinkedIn](#) , [Medium](#) , [GitHub](#)

RESEARCH INTERESTS

Information Communications Technology for Development (ICTD), AI/ML, Remote Sensing, and HCI.

EDUCATION

PhD in Computer Science

Virginia Tech, Blacksburg VA, USA

2025 - Present

Remote Sensing IGEP

Virginia Tech, Blacksburg VA, USA

2025 - Present

Master of Science in Computer Science

South Asian University, New Delhi, India

2020 - 2022

CGPA: 7.87/9.0 (Second Rank)

Bachelor of Science (Honours) in Computer Science

University of Delhi, New Delhi, India

2017 - 2020

CGPA: 7.70/10.0

FELLOWSHIPS/AWARDS AND HONORS

- Remote Sensing Interdisciplinary Graduate Education Program Fellowship, First-Year PhD Aug '25 - Jun '26 Fellowship
- Best Presented Award, IEEE ICETCI 2023 2023

EXPERIENCE

Research Experience

Project Scientist, Indian Institute of Technology (IIT), Delhi.

Jan '24 - June '25

ICTD Lab

PI: Prof. Aaditeshwar Seth

1. Addressing Equity in Agricultural Resources Under MGNREGA Scheme.

- Developed a methodology for assessing equity in access to water resources and enhancing agroforestry for agricultural income improvement. [\[Paper\]](#) [\[Code\]](#)
- Trained object detection and image segmentation models on high resolution imagery to geotag agricultural assets (ponds, wells, crop fields, and plantation trees) from Google Maps. Applied entropy-based methods and CutMix Augmentation techniques to reduce false positive cases. [\[Paper\]](#) [\[Code\]](#)

2. Tracking Socioeconomic Development in Rural India Using Satellite Imagery. [\[Paper\]](#) [\[code\]](#)

- Aggregated census variables at the village level to create five socioeconomic indicators covering 75% of rural villages in India.
- Designed and trained a model that combines daytime satellite imagery and nightlight data to create a proxy for census, enabling the study of socioeconomic development trends and dynamics in rural villages across India.

3. Created administrative boundary shapefiles at multiple levels (village, block, subdistrict, state) for 15 Indian states. [\[Code\]](#)

Research Assistant, Ashoka University.

Sept '24 - Present

PI: Prof. Anirban Sen and Prof. Debayan Gupta

1. Leveraging LLMs in Generating Stories Around Indian Policies. [\[Paper\]](#) [\[Code\]](#) [\[Website\]](#)

- Collected longitudinal data from mass media sources on various Indian policy issues (Annual Budget, Farmers' Protest, Unlawful Activities (Prevention) Act, and Big Corporations) between 2014 to 2024.
- Fine-tuned open-source LLMs to enable question-answering on policy issues and generate engaging, factually accurate stories around them. Additionally, evaluated the effectiveness of storytelling with LLMs through a human-in-the-loop approach.

Project Scientist, IIT Delhi.

Jun '22 - Nov '23

Vision Lab

PI: [Prof. Chetan Arora](#) and [Prof. Nandana Sengupta](#)

Assessing the Feasibility and Ethics of Economic Status Prediction using Deep Learning on Household Images.

[\[Paper\]](#) [\[Code\]](#)

- Investigated whether household images collected from remote tribal areas of four northeastern Indian states, could accurately predict their socioeconomic status thus allowing efficient allocation of resources at a granular level.
- Trained Transformer-Based vision models using metric learning based losses. Conducted two benchmarking analyses: with models trained only on the asset information of the households collected during the same survey and with human accuracy.

Master's Dissertation, South Asian University.

May '21 - May '22

Machine Learning and Statistical Inference Lab

PI: [Prof. Reshma Rastogi](#)

Generative Adversarial Networks and its Applications. [\[Paper\]](#) [\[Code\]](#)

- Executed GAN on MNIST Digit dataset and MNIST Fashion dataset with Self Attention Module and Spectral Normalization in both Generator and Discriminator. Added TTUR (Two Time Scale Update) to stabilize the training of the GAN.
- Outcome of my dissertation was a novel architecture called MLGAN (Multi-Label Generative Adversarial Network), which was designed to address the challenge of data imbalance in multilabel datasets.

Industry Experience

Sentiment Analysis Internship, **Omdena**

Sept '21 - Oct '21

Business and Data Analytics Internship, **The Sparks Foundation**

Aug '21 - Sep '21

Big Data and ML Internship, **Rani.ai**

Aug '21 - Oct '21

PUBLICATIONS

Research Papers

Aatif Nisar Dar, Aditya Raj Singh, Anirban Sen. "PolicyStory: Leveraging Large Language Models to Generate Comprehensible Summaries of Policy-News in India." Accepted at the Proceedings of the 2025 International Conference of The Computational Social Science Society of the Americas

Aatif Nisar Dar, et al. "A Methodology for Equity Assessment of Access to Water and Agroforestry Enhancement for Agricultural Income Enhancement." - with Prof. Aaditeshwar Seth. Manuscript in preparation, intended for submission to a peer-reviewed conference/journal.

Raman Kumar, **Aatif Nisar Dar**, Aaditeshwar Seth. "Multi-Resolution Satellite Data Processing for Contextually Relevant Land Use–Land Cover Mapping: Distinguishing Scrublands, Farms, and Plantations Across India." Manuscript in preparation, intended for submission to a peer-reviewed conference/journal.

Aatif Nisar Dar, Nandana Sengupta, Chetan Arora. "Assessing the Feasibility and Ethics of Economic Status Prediction using Deep Learning on Household Images." ACM Journal on Computing and Sustainable Societies (2024).

Aatif Nisar Dar and Reshma Rastogi, 2023. "MLGAN: Addressing Imbalance in Multilabel Learning Using Generative Adversarial Networks," In Proceedings of IEEE International Conference on Emerging Techniques in Computational Intelligence (ICETCI), Hyderabad, India, 2023, pp. 324-331. **Best Presenter Award**

Aatif Nisar Dar. "Principal Component Analysis," Global Scientific Journal, GSJ: Volume 9, Issue 7, July 2021, Online: ISSN 2320-9186. (*Lightly Peer-reviewed*)

Posters/Workshops/Symposiums

Aatif Nisar Dar, Badrinarayanan Padmanabhan, Mrunal Atul Kadane, Aaditeshwar Seth. "Using Satellite Images to Track Relative Socioeconomic Development in Rural India". [Poster](#) at ACM SIGCAS/SIGCHI Conference on

Computing and Sustainable Societies (COMPASS '24), 2024.

Research Week with Google 2024. **Funded travel**

Symposium on Machine Learning, IIT - Bombay. **Funded travel**

1-3 Feb '24

21-23 Dec '23

SERVICE

- [Reviewer](#), ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS '25) 2025

ACHIEVEMENTS AND VOLUNTARY WORK

- Voluntary Organizer at ACM COMPASS '24, New Delhi - India. 08-11 July '24
- Best Presenter Award at the ICETCI 2023 conference for the paper entitled "MLGAN: Addressing Imbalance in Multilabel Learning Using Generative Adversarial Networks." 21-23 Sept '23
- Member of AISCF (AI Safety Careers Fellowship), enhancing understanding of AI systems and safety measures. Aug-Oct '23
- Second position at Hackathon organized by the Department of Computer Science, Ramanujan College, University of Delhi. Feb '20
- Second position for Essay Writing Competition on the topic 'No Voter to be Left Behind,' Chief Electoral Officer. May '18
- Students Union Representative at Computer Science Department of Keshav Mahavidyalaya, University of Delhi. Sept '18 - Sept '19
- [Secretary](#) at NSS (National Service Scheme). Aug '17 - Aug '19
- Attended Ethical Hacking Workshop at DTU (Delhi Technological University). Feb '18
- Engaged in MUN (Model United Nations) activities at Jamia Millia Islamia University. Oct '18