Aditya **Narendra**

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Education

May 2021 **Odisha University of Technology and Research** **Bhubaneswar, India**
May 2017 Bachelor of Technology (B.Tech) in Fashion and Apparel Technology CGPA: 8.43/10
UG Thesis - **Generative Models and Recommender Systems for AI-driven Fashion** [🔗]

Experience

Mar 2025 **Tech Mahindra** **Bhubaneswar, India**
Aug 2022 *Associate Software Engineer | Supervisor: Mr. Ipsit Misra (Manager)*
- Developed a Graph Neural Network (GNN) based accident detection feature for a smart traffic solution for the Govt. of Odisha, improving emergency response time by over 60% .
- Reduced record retrieval time by 42% for a scalable EHR tracking application handling over 100,000+ daily records for a US-based client.
- Taught '*401-Deep Learning*' [🔗] , a DL course to 50+ undergraduates from diverse academic backgrounds.

Jan 2025 **University of Cincinnati | Prasath Lab** **Remote**
Apr 2024 *Research Intern | Advisor: Dr.Surya Prasath*
- Developed conformal prediction methods to enhance uncertainty quantification in pathological cell classification workflows, improving model interpretability and robustness.
- Designed a sampling-based feature bias mitigation technique to address data-driven biases in cervical cytology classification, improving model fairness and reliability.

Jan 2024 **ETH Zürich | Assisted Forest Regeneration Lab** **Remote**
Dec 2022 *Research Affiliate | Advisor: Dr. Leland K Werden*
- Designed a DL-based sapling detection algorithm that detects over 300 tree species, for savannah and mangrove restoration projects.
- Finetuned a Llama2-13b model for a summarization platform with custom review tags for grey literature of regeneration practices in ASReview Lab and was featured in their monthly newsletter. [🔗]

Sept 2023 **Carnegie Mellon University | Xu Lab** **Remote**
Aug 2022 *Research Intern | Advisor: Prof. Min Xu*
- Worked on a Contrastive Self-Supervised Learning (CSSL) approach for macromolecular structure classification from cryo-ET data with limited labels. [🐙]
- Contributed to a unsupervised multi-task learning framework for 3D subtomogram image alignment, clustering, and segmentation in cryo-ET environment.

Aug 2022 **ETS Montreal** **Montreal, Canada**
Jul 2022 *Research Intern | Advisors: Prof. Pierre-Marc Jodoin & Prof. Thomas Grenier*
- Evaluated various weakly supervised segmentation techniques for cardiac diseases diagnosis. [🐙]
- Partcipated in the 3rd Edition Summer School on Deep Learning for Medical Imaging (DLMI-22).

Jan 2022 **International Institute of Information Technology, Hyderabad (IIIT-H)** **Hyderabad, India**
Jul 2021 *Research Assistant | Advisors: Prof. Jayanthi Sivaswamy & Prof. C.V. Jawahar*
- Worked on multi-scale attention architecture for COVID-19 detection from Chest-X Rays.
- Assisted in designing a sub-cortical structure segmentation database for young population [🔗] .

Publications

*= equal contribution

P1: Optimizing Conformal Prediction Sets for Pathological Image Classification [Paper] [🐙]
Shubham Ojha*, Aditya Narendra*, Abhay Kshirsagar, Shyam Sundar Debsarkar & Surya Prasath
Pattern Recognition (Impact Factor: **7.5***)* `[Under Review]`

P2: Ensuring Class-Conditional Coverage for Pathological Workflows [Paper] [Website]
Siddharth Narendra, Shubham Ojha, Aditya Narendra, Abhay Kshirsagar & Abhisek Mallick
AAAI Conference on Artificial Intelligence-2025 **[AAAI'25]**

P3: Mitigating Feature Bias in DL Models for Cervical Cytology [Paper] [Website]
Subhashree Sahu, Shubham Ojha & Aditya Narendra
WIML, Neural Information Processing Systems-2024 **[NeurIPS'24]**

P4: Uncertainty Quantification in DL Models for Cervical Cytology [Paper] [Website]
Shubham Ojha & Aditya Narendra
Medical Imaging with Deep Learning-2024 **[MIDL'24]**

Select Projects

Prediction of Future Continuous Motion States from ECoG Recording [] [Slides] **Jul 2023 - Aug 2023**
Advisor: Dr. José Biurrun Manresa

> Participated in the 2023 Neuromatch Academy Summer School on Computational Neuroscience [] .
> Designed regression models for future motion state prediction using time series analysis on ECoG data. [Notes]

MoSwasthya: ML Based Application for Cardiac Disease Risk Prediction [] [] [Slides] **Nov 2022 - Dec 2022**
Advisor: Mr. Ipsit Misra

> Created an all-in-one application that provides an ensemble method-based FAPS (First Action Prediction System) that estimates the risk of cardiac disease using non-medical inputs with an accuracy of 91.24%.
> This application also provides user-health analytics and details of healthcare facilities based on user location.

Vision-Based Models for Sorting and Segregation of Waste [] [Slides] **Apr 2022 - Jul 2022**
Associated Organization: Omdena

> Worked as a Junior ML Engineer on state-of-art CNN techniques for segregation and sorting of waste/trash into 10 commonly occurring classes. []
> Evaluated this approach on benchmarking datasets demonstrating matching SOTA accuracies of over 97% in most cases.
> Worked as a co-task lead for the deployment of the application using the Hugging Face-Gradio Framework.

Skills & Research Interests

Languages: C, C++, Python, Java, HTML/CSS

Frameworks: PyTorch, Tensorflow, Keras, REST API

Misc.: Git, Linux, LaTeX, QGIS

Research Interests: Trustworthy Machine Learning, Biomedical Image Analysis & Human-Centered AI

Relevant Coursework

Classroom (w/Subject Code): Calculus [I-III] (PAM1A001), Linear Algebra (PAT2A001), Introduction to Statsitics & Probability (PMA4E001), Data Structures & Algorithms (PCL1B201), Database Systems (PCL2B201)

Online (NPTEL Marksheet): Introduction To Algorithms and Analysis (IIT-KGP), Computer Graphics (IIT-G), DataBase Management System (IIT-KGP), Computer Architecture (IIT-M)

MOOCs: Deep Learning Specialization (DeepLearning.AI), Machine Learning (Coursera), 6.431x: Probability- The Science of Uncertainty and Data (MITx), Fundamentals of Digital Marketing (Google Digital Garage)

Awards

2022 Smart Odisha Hackathon: Awarded **1st Prize** out of 1000 teams **worth $2500** by the Government of Odisha [] .

2022 Hugging Face Gradio NYC Hackathon: Awarded **2nd prize** out of 100 teams **worth $200** by Hugging Face [] .

OUTR Merit Scholarship: Received tuition scholarships for ranking **1st in the department** during 3rd and 4th UG years.