Aditya **Narendra**

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Education

May 2017 – May 2021 | **Odisha University of Technology and Research (OUTR)** | **Bhubaneswar, Odisha**
Bachelor of Technology (B.Tech) in Fashion and Apparel Technology | CGPA: 8.43/10
Undergraduate Thesis - **Applications of Artificial Intelligence in Fashion Industry** [ ]
Courses - Data Structures, Algorithms, Machine Learning, Linear Algebra, Calculus, Probability & Statistics

Experience

Dec 2022 – Present | **ETH Zürich | Assisted Forest Regeneration Lab** [ ] | **Zurich, Switzerland**
Research Affiliate | Advisor: Dr. Leland Werden
- Working on a project on quantification of potential carbon capture and plant biodiversity recovery of forest, savannah, and mangrove assisted restoration projects.
- Currently analyzing data related to regeneration practices and creating data pipelines.
- Built a transformer based model for summarization of grey literature regarding regeneration practices.

Jul 2023 – Aug 2023 | **Neuromatch Academy** [ ] | **Remote**
Research Volunteer | Advisors: Dr. José Biurrun Manresa & Dr. Xi-He Xie
- Participated in the 2023 Summer School on Computational Neuroscience.
- Worked on 'Prediction of Future Continuous Motion States from ECoG Recordings' based on joystick tracking data. [ ] [Slides]

Aug 2022 – Oct 2023 | **Center of Excellence - Artificial Intelligence [ ] | Tech Mahindra [ ]** | **Bhubaneswar, India**
Associate Researcher | Advisors: Prof. Jibitesh Mishra & Ipsit Misra
- Developed robust and interpretable deep learning models for applications such as smart traffic systems and healthcare.
- Taught an introductory course [ ] on deep learning to over 50 undergrads from various backgrounds.
- Published 3 papers and 1 Patent at international conferences and journals.

Aug 2022 – Sept 2023 | **Carnegie Mellon University | Xu Lab [ ]** | **Pittsburgh, USA**
Research Intern | Advisor: Prof. Min Xu
- Built an end-to-end multimodal model for particle picking and subtomogram alignment.
- Also worked on modeling continuous conformational changes in cryo-ET images with self-supervised representation learning.

Jul 2022 – Aug 2022 | **École de Technologie Supérieure (ÉTS Montreal)** | **Montreal, Canada**
Summer School Research Intern | Advisors: Prof. Pierre-Marc Jodoin & Prof. Thomas Grenier
- Partcipated in 2022 3rd Edition Summer school on Deep Learning for Medical Imaging(DLMI) [ ] .
- Worked on benchmarking various weakly supervised segmentation techniques for cardiac diseases diagnosis [ ] .

Jul 2021 – Jan 2022 | **International Institute of Information Technology, Hyderabad (IIIT-H) [ ]** | **Hyderabad, India**
Research Intern | Advisor: Prof. Jayanti Sivaswamy & Prof. CV Jawahar
- Worked on an attention-based model for Covid-19 detection from Chest-X Rays.
- Created a database for the segmentation of sub-cortical structures from MRI scans for the young population.

Skills

Languages: C, C++, Python

Frameworks: Tensorflow, PyTorch, Keras, REST API

Misc.: Git, Linux, LaTeX, Matlab, QGIS

Research Interests

AI for Social Good

Trustworthy Machine Learning

Human-AI Interaction

Publications

Deep Learning Based Classification of the Big Four Snake Species Using Visual Features [🔗] [🐙]
Nishikant Parida, Aditya Narendra, Priyanshu Panda, Pooja K Reddy & Ipsit Misra
14th IEEE International Conference on Cloud Computing, Data Science & Engineering, India `[Confluence'24]`

From Robots to Books: An Introduction to Smart Applications of AI in Education (AIEd) [🔗] [Slides]
Shubham Ojha, Aditya Narendra, Siddharth Mohapatra, Ipsit Misra
Springer International Conference on Recent Innovations in Computing, Hungary `[ICRIC'23]`

Chaurah: Smart Raspberry-Pi Parking System [🔗] [Slides] [🐙]
Aditya Narendra, Soumya Choudhury, Asutosh Mishra & Ipsit Misra
International Conference on Communication and Computational Techniques, India `[ICCCT'23]`

Patents

AI-Based Emergency Healthcare Solution (Patent No- 202331002146) [🔗] `[India Patents Office]`
Ipsit Misra, Jibitesh Mishra, Aditya Narendra, Khirod Behera
`[Published and Under Examination]`

Select Projects

Satellite Data-based Pollution Forecasting using CNNs [🐙] **Jan 2023 - Apr 2023**
Advisor: Prof. Jibitesh Mishra

- Built a CNN-based model to predict Breezometer Air Quality Index (BAQI) using Sentinel-2 images achieving over 87% Accuracy matching existing industry models. **[Paper In Preparation]**
- Created a dataset of over 10,000 satellite images at resolution 1280 x 1280 and 10,000 Breezometer air quality data records across 57 cities in India.

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

- Created an all-in-one application that provides a ensemble methods based FAPS (First Action Prediction System) which estimate the cardiac disease risk on non-medical inputs with a real-day accuracy of 91.24%.
- Won the First Prize worth 2500$ USD among 4000 participants at the Smart Odisha Hackathon.

Vision-Based Models for Sorting and Segregation of Waste [🐙] [Slides] **July 2022 - Aug 2022**
Associated Organization: Omdena

- Built various vision-based models using state of art architectures for segregation and sorting of waste/trash into 10 commonly occurring classes as a task lead for the model-building team.
- Evaluated this approach on benchmark datasets and models demonstrating almost matching accuracies in most cases.
- Worked as a co-task lead for the deployment of the application using the Hugging Faces-Gradio Framework.

CoughVid: Covid-19 Detection from Cough Voice Samples [🐙] **Feb 2021 - Jan 2021**
Advisor: Prof. S Behera

- Developed an RNN and MFCC feature-extraction based model to detect Covid-19 from coughing audio samples.
- Obtained an overall accuracy of 82.42% in Pfizer Digital Medicine Challenge.

Honors and Awards

Smart Odisha Hackathon, 2022 [🌐] [🔗] Awarded 1st Prize worth 2500$ USD by the Chief Minister of Odisha for Healthcare sector out of 1000 teams nationwide.

Hugging Face Gradio NYC Hackathon [🌐] Ranked 2 out of 100s of participating teams and won 200$ USD worth of Hugging Face store goodies.

OUTR Merit Scholarship: Secured academic scholarship for ranking 1st in the department over last two undergrad years.

OUTR Best Thesis Award: Received nomination for my thesis among 1200+ students in 2021 undergraduate batch.