

# Aditya Narendra

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## Education

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

## Experience

Dec 2022 Present	<b>ETH Zürich   Assisted Forest Regeneration Lab</b> [🔗] <i>Research Affiliate   Advisor: Dr. Leland Werden</i> <ul style="list-style-type: none"><li>&gt; Working on a project on quantification of potential carbon capture and plant biodiversity recovery of forest, savannah, and mangrove assisted restoration projects.</li><li>&gt; Currently analyzing data related to regeneration practices and creating data pipelines.</li><li>&gt; Built a transformer based model for summarization of grey literature regarding regeneration practices.</li></ul>	<b>Zurich, Switzerland</b>
Jul 2023 Aug 2023	<b>Neuromatch Academy</b> [🔗] <i>Research Volunteer   Advisors: Dr. José Biurrún Manresa &amp; Dr. Xi-He Xie</i> <ul style="list-style-type: none"><li>&gt; Participated in the 2023 Summer School on Computational Neuroscience.</li><li>&gt; Worked on 'Prediction of Future Continuous Motion States from ECoG Recordings' based on joystick tracking data. [🔗] [Slides]</li></ul>	<b>Remote</b>
Aug 2022 Oct 2023	<b>Center of Excellence - Artificial Intelligence</b> [🔗]   <b>Tech Mahindra</b> [🔗] <i>Associate Researcher   Advisors: Prof. Jibitesh Mishra &amp; Ipsit Misra</i> <ul style="list-style-type: none"><li>&gt; Developed robust and interpretable deep learning models for applications such as smart traffic systems and healthcare.</li><li>&gt; Taught an introductory course [🔗] on deep learning to over 50 undergrads from various backgrounds.</li><li>&gt; Published 3 papers and 1 Patent at international conferences and journals.</li></ul>	<b>Bhubaneswar, India</b>
Aug 2022 Sept 2023	<b>Carnegie Mellon University   Xu Lab</b> [🔗] <i>Research Intern   Advisor: Prof. Min Xu</i> <ul style="list-style-type: none"><li>&gt; Built an end-to-end multimodal model for particle picking and subtomogram alignment.</li><li>&gt; Also worked on modeling continuous conformational changes in cryo-ET images with self-supervised representation learning.</li></ul>	<b>Pittsburgh, USA</b>
Jul 2022 Aug 2022	<b>École de Technologie Supérieure (ÉTS Montreal)</b> <i>Summer School Research Intern   Advisors: Prof. Pierre-Marc Jodoin &amp; Prof. Thomas Grenier</i> <ul style="list-style-type: none"><li>&gt; Participated in 2022 3rd Edition Summer school on Deep Learning for Medical Imaging(DLMI) [🔗].</li><li>&gt; Worked on benchmarking various weakly supervised segmentation techniques for cardiac diseases diagnosis [🔗].</li></ul>	<b>Montreal, Canada</b>
Jul 2021 Jan 2022	<b>International Institute of Information Technology, Hyderabad (IIIT-H)</b> [🔗] <i>Research Intern   Advisor: Prof. Jayanti Sivaswamy &amp; Prof. CV Jawahar</i> <ul style="list-style-type: none"><li>&gt; Worked on an attention-based model for Covid-19 detection from Chest-X Rays.</li><li>&gt; Created a database for the segmentation of sub-cortical structures from MRI scans for the young population.</li></ul>	<b>Hyderabad, India</b>

## 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

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### 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

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### AI-Based Emergency Healthcare Solution (Patent No- 202331002146) [🔗]

[India Patents Office]

Ipsit Misra, Jibitesh Mishra, Aditya Narendra, Khired Behera  
[Published and Under Examination]

## Select Projects

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### 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

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**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.