

# 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: 9.56/10 (Maj.)

## Experience

Dec 2022	<b>ETH Zürich   Assisted Forest Regeneration Lab</b> [🌐]	<b>Zurich, Switzerland</b>
Jan 2024	<i>Research Affiliate   Advisor: Dr. Leland K 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; Built a LLM-based model with custom review tags for summarizing grey literature of regeneration practices in ASReview Lab and was featured in their monthly newsletter. [🔗]</li></ul>	
Jul 2023	<b>Neuromatch Academy</b> [🌐]	<b>Remote</b>
Aug 2023	<i>Research Volunteer   Advisors: Dr. José Biurrun 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] [Notes]</li></ul>	
Aug 2022	<b>Tech Mahindra</b> [🌐]   <b>Center of Excellence-Artificial Intelligence</b> [🌐]	<b>Bhubaneswar, India</b>
Oct 2023	<i>Associate Researcher   Advisors: Prof. Jibitesh Mishra &amp; Ipsit Misra</i> <ul style="list-style-type: none"><li>&gt; Led a team to build a smart traffic system for Govt of Odisha, now in use at 50+ statewide crossings.</li><li>&gt; Developed an EHR tracking application involving over 75k records for a private sector client.</li><li>&gt; Taught '401-Deep Learning' [🔗] an introductory DL course to 50+ undergrads from various backgrounds.</li></ul>	
Aug 2022	<b>Carnegie Mellon University   Xu Lab</b> [🌐]	<b>Pittsburgh, USA</b>
Sept 2023	<i>Research Intern   Advisor: Prof. Min Xu</i> <ul style="list-style-type: none"><li>&gt; Contributed to an unsupervised clustering model for structural pattern mining of Cryo-ET data.</li><li>&gt; Also worked on modelling continuous conformational changes in cryo-ET images with self-supervised representation learning. [🔗]</li></ul>	
Jul 2022	<b>École de Technologie Supérieure (ÉTS Montreal)</b>	<b>Montreal, Canada</b>
Aug 2022	<i>Summer School Research Intern   Advisors: Prof. Thomas Grenier &amp; Prof. Pierre-Marc Jodoin</i> <ul style="list-style-type: none"><li>&gt; Participated in the 2022 Summer School on Deep Learning for Medical Imaging (3rd Edition). [🌐]</li><li>&gt; Worked on benchmarking various weakly supervised segmentation techniques for cardiac diseases diagnosis. [🔗]</li></ul>	
Jul 2021	<b>International Institute of Information Technology, Hyderabad (IIIT-H)</b> [🌐]	<b>Hyderabad, India</b>
Jan 2022	<i>Research Intern   Advisor: Prof. Jayanthi Sivaswamy &amp; Prof. C.V. 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 of youths.</li></ul>	

## 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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### Uncertainty Quantification in DL Models for Cervical Cytology [[📄 Paper](#)] [[🔗](#)]

Shubham Ojha & Aditya Narendra

*Medical Imaging with Deep Learning-2024*

[MIDL '24]

### Deep Learning Based Classification of the Big Four Snake Species Using Visual Features [[📄 Paper](#)] [[Slides](#)] [[🔗](#)]

Nishikanta Parida, Aditya Narendra, Pooja Reddy Kolimi, Priyansu Panda & Ipsit Misra

*14th IEEE International Conference on Cloud Computing, Data Science & Engineering*

[Confluence '24]

### From Robots to Books: An Introduction to Smart Applications of AI in Education (AIED) [[📄 Paper](#)] [[Slides](#)]

Shubham Ojha, Siddharth Mohapatra, Aditya Narendra & Ipsit Misra

*7th Springer International Conference on Recent Innovations in Computing*

[ICRIC '23]

## Patents

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### 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

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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 an Ensemble Method based FAPS (First Action Prediction System) which estimates the cardiac disease risk on non-medical inputs with a real-day 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](#)]

July 2022 - Aug 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 benchmark datasets demonstrating matching accuracies of over **97%** in most cases.
- > Worked as a co-task lead for the deployment of the application using the Hugging Faces-Gradio Framework.

## Awards

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**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 [[🔗](#)].

**2022 DLMI Summer School:** Received a **full-ride grant** to attend the DLMI summer school at ÉTS Montreal [[🔗](#)].

**OUTR Merit Scholarship:** Secured scholarships for **ranking 1st** in the department during my last two undergrad years.

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