

# 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	<b>ETH Zürich   Assisted Forest Regeneration Lab</b> [🔗]	<b>Zurich, Switzerland</b>
Present	<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>	
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>Center of Excellence - Artificial Intelligence</b> [🔗]   <b>Tech Mahindra</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; Developed robust and interpretable deep learning models for applications such as smart traffic systems and healthcare.</li><li>&gt; Taught '401-Deep Learning' [🔗] an introductory DL course to 50+ undergrads from various backgrounds.</li><li>&gt; Published 3 research papers at international conferences and filed 1 Patent at IPO.</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; 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>	
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, L<sup>A</sup>T<sub>E</sub>X, 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** [[Paper](#)] [[Slides](#)] [[🔗](#)]  
Nishikanta Parida, Aditya Narendra, Pooja Reddy Kolimi, Priyansu Panda & 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)** [[Paper](#)] [[Slides](#)]  
Shubham Ojha, Siddharth Mohapatra, Aditya Narendra & Ipsit Misra  
*Springer International Conference on Recent Innovations in Computing, Hungary* [ICRIC'23]

**Chaurah: Smart Raspberry-Pi Parking System** [[Paper](#)] [[Slides](#)] [[🔗](#)]  
Soumya Ranjan Choudhary, Aditya Narendra, Ashutosh 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 & 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 estimate 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 as a task lead for the model-building team. [[🔗](#)]
- > 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 thesis among 1200+ students in 2021 undergraduate batch.

## Service

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**401-Deep Learning | Head Instructor:** Taught an introductory DL course [[🔗](#)] to over 50 undergrads at COE-AI Lab.

**OUTR Outreach Committee | Member:** Facilitated sessions and bootcamps to promote undergraduate research and provide STEM education to underprivileged students.

**Departmental Mentorship Program | Mentor:** Worked for over 2 years as an mentor to assist first-year undergraduates.