

# Aditya Narendra

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## Education

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

## Experience

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Nov 2024	<b>Tech Mahindra   Center of Excellence-Artificial Intelligence</b>	<b>Bhubaneswar, India</b>
Aug 2022	<i>Associate Software Engineer   Supervisor: Mr. Ipsit Misra (Director)</i> <ul style="list-style-type: none"><li>&gt; Developed a Graph Neural Network (GNN) based accident detection feature for a smart traffic solution for the Govt. of Odisha, which improved emergency response time by over 60% .</li><li>&gt; Reduced record retrieval time by 42% for a scalable EHR tracking application handling over 100,000+ daily records for a US-based client.</li><li>&gt; Taught '401-Deep Learning' [🔗], a DL course to 50+ undergraduates from diverse academic backgrounds.</li></ul>	
Jan 2024	<b>ETH Zürich   Assisted Forest Regeneration Lab</b>	<b>Remote</b>
Dec 2022	<i>Research Affiliate   Advisor: Dr. Leland K Werden</i> <ul style="list-style-type: none"><li>&gt; Designed a DL-based sapling detection algorithm that detects over 300 tree species, for savannah and mangrove restoration projects.</li><li>&gt; 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. [🔗]</li></ul>	
Sept 2023	<b>Carnegie Mellon University   Xu Lab</b>	<b>Remote</b>
Aug 2022	<i>Research Intern   Advisor: Prof. Min Xu</i> <ul style="list-style-type: none"><li>&gt; Worked on a Contrastive Self-Supervised Learning (CSSL) approach for macromolecular structure classification from cryo-ET data with limited labels. [🔗]</li><li>&gt; Contributed to a unsupervised multi-task learning framework for 3D subtomogram image alignment, clustering, and segmentation in cryo-ET environment.</li></ul>	
Aug 2022	<b>ETS Montreal</b>	<b>Montreal, Canada</b>
Jul 2022	<i>Research Intern   Advisors: Prof. Pierre-Marc Jodoin &amp; Prof. Thomas Grenier</i> <ul style="list-style-type: none"><li>&gt; Evaluated various weakly supervised segmentation techniques for cardiac diseases diagnosis. [🔗]</li><li>&gt; Participated in the 3rd Edition Summer School on Deep Learning for Medical Imaging (DLMI-22).</li></ul>	
Jan 2022	<b>International Institute of Information Technology, Hyderabad (IIIT-H)</b>	<b>Hyderabad, India</b>
Jul 2021	<i>Research Assistant   Advisors: Prof. Jayanthi Sivaswamy &amp; Prof. C.V. Jawahar</i> <ul style="list-style-type: none"><li>&gt; Worked on multi-scale attention architecture for COVID-19 detection from Chest-X Rays.</li><li>&gt; Assisted in designing a sub-cortical structure segmentation database for young population [🔗].</li></ul>	

## Publications

\*= equal contribution

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- 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]
- P5: 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 '23]
- P6: 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]

## Select Projects

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**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

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**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

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

**Online (NPTEL Marksheets 📄):** Introduction To Algorithms and Analysis (IIT-KGP), Computer Graphics (IIT-G), Data Base 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

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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 [🔗].

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