


Arnav Samal

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EDUCATION

National Institute of Technology, Rourkela, India

May 2026

B.Tech. in Computer Science and Engineering

Current CGPA: **9.12**

SAI International School, Bhubaneswar, India

July 2022

AISSCE (Science, PCM)

Percentage: **94.8%**

COURSEWORK

Courses: Deep Learning - NPTEL, Computer Vision, Natural Language Processing, Machine Learning, Probability & Statistics, Operating Systems, Data Structures & Algorithms, Database Engineering

SKILLS

Programming Languages: Python, C++, C, SQL

Libraries/Frameworks: PyTorch, HuggingFace, Sci-kit Learn, SciPy, NumPy, Matplotlib, Flask

Tools: Git, GitHub, Conda, Docker, Jupyter, LaTeX, Microsoft SQL Server

Languages: English, Hindi, Odia

EXPERIENCE

Machine Learning & Vision Lab, IITH | *Research Intern, On-site*

May 2025 – Present

- Working under the guidance of **Prof. Vineeth Balasubramanian** at the Dept. of CSE, working on **concept-based models (CBMs)** in vision & language.

Data-driven Intelligence & Learning Lab, IITH | *Research Intern, On-site*

May 2024 – Aug 2024

- Worked under the supervision of **Dr. Konda Reddy Mopuri** at the Dept. of AI on **Explainability in Vision Transformers**.
- Conducted an in-depth literature review and performed extensive experiments to measure patch importance and the overlay of top-k tokens between different blocks.
- Analyzed and proposed post-hoc explanation techniques and token pruning methods to improve interpretability.

PROJECTS

SketchWarp |  *Python, PyTorch*

Feb 2025 – May 2025

- Developing a self-supervised learning framework in PyTorch for dense photo-to-sketch correspondences, enabling automatic image-to-sketch warping.
- Designing and implementing training and inference pipelines, inspired by the paper “*Learning Dense Correspondences between Photos and Sketches.*”

NeurIPS - Ariel |  *Python, SciPy, NumPy*

Aug 2024 - Oct 2024

- Developed a pipeline for exoplanet spectral prediction using calibrated multi-sensor time-series data, implementing spatial-temporal aggregation, phase detection via gradient analysis, and Nelder-Mead optimization.
- Ranked in the top 20% in the NeurIPS-Ariel Challenge, with an evaluation score of 0.5704.

ACHIEVEMENTS & CERTIFICATIONS

Ranked **12th** in the Department of Computer Science at NIT Rourkela (up to 6th semester)

Secured **5th** worldwide in the Capsule Vision Challenge 2024, organized by CVIP 2024

Selected among 170 from 20,000+ applicants for the SURE program at IIT Hyderabad

Achieved **2nd** position in HackFest, organized by ML4E for undergraduate students

Recognized as Kaggle Expert (Datasets & Notebook)

EXTRACURRICULAR ACTIVITIES

Core Team Member, Research Division of ML4E (Machine Learning Club) at NIT Rourkela

Quizzer for Inquizzitive (Quizzing Society) at NIT Rourkela