Pritipriya Dasbehera

Bhubaneswar, India

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Education

National Institute of Science Education and Research *Bhubaneswar, India*
Integrated Masters in Physical Science *October 2021 - Present*

- Minor in Computer Sciences
- Current GPA: 9.45
- **Physics Coursework:**
  Quantum Field Theory, Many-body physics, Condensed Matter, Statistical Mechanics, Nuclear Physics
- **Computer Science:**
  Graph Theory and Algorithm Design, Machine Learning, Complexity Theory
- **Relevant Lab Courses:**
  Basic and Advanced Electronics, Optics, Computational, Nuclear Physics, Solid State

Kendriya Vidyalaya Balasore *Odisha, India*
Middle and High School *August 2011 - May 2021*

- CBSE board class 12th - 96.8 %
- CBSE board class 10th - 98 %

Work Experience

MathePhysics *Online*
Summer internship | Bio-Physics/ Neuroscience *June 2024 - Nov 2024*

- Under the supervision of Akshunna S. Dogra and Dr. William T. Redman
- Distance encoding scheme from the variability of grid cell parameters

Inter-University Acceleration Centre *New Delhi, India*
Summer internship | Accelerator Physics *June 2023 - July 2023*

- Under the supervision of Dr. Rajesh Vikram Hariwal
- Investigations on Meta-materials for Beam Diagnostics Application

National Institute of Science Education and Research *Bhubaneswar, India*
Summer internship | Computational Astronomy *May 2022 - July 2022*

- Under the supervision of Dr. Nishikanta Khandai
- Study and implement brute force and Nearest Grid Point algorithm to find the Nearest Neighbors under Periodic Boundary Conditions and compare their time complexities.

University Projects

Secure communication with Chua circuit *Bhubaneswar*
NISER Open-Lab *Aug 2024 - Nov 2024*

- Design and analysis of Chua circuit and study of the non-linear element constructed using op-amp as negative resistance
- Synchronization of two Chua circuits and study of its stability for different parameter values
- Use of synchronization to securely transmit digital and analog information by using chaos to encode information

Machine learning for wavefunction dynamics *Odisha, India*
NISER | GitHub-repo *Jan-March 2024*

- Reconstruction and prediction of the probability density of a quantum system using PINN and regression
- Report can be found here

Quantum Neural Network *Bhubaneswar*
NISER *Aug 2023 - Oct 2023*

- Building a Image classifier algorithm with classic Convolutional Neural Network and a linear quantum layer
- Implementation of forward and backward pass on a quantum layer

Experimental verification of the Einstein-de Haas effect *Odisha, India*
National Anveshika Experimental Skill Test *June 2023*

- A physical phenomenon in which a change in the magnetic moment of a free body causes the body to rotate following conservation of angular momentum

Skills

Programming	Python(Pandas, Tensorflow, PyTorch, NumPy, Scipy) Rust, C, C++, Julia
Miscellaneous	LaTeX, Linux CLI, Vim
Soft Skills	Critical thinking, Adaptability, Teamwork, Openness to criticism

Highlights

2024	**President**, Robotech Club NISER	
2023	**Internship Talk**, Metamaterials for accelerator physics	*IUAC, Delhi, India*
2023	**Cleared Prelims**, National Anveshika Experiment Skill Test(NAEST)	
2022	**Second position in Inquizitive Physics Quiz**, IGNITE	
2022	**First position in Vigyan Vyakhya(Sci-Video) competition**, IGNITE	*India*
2021	**Inspire Scholar**, Department of Science and Technology	*India*

Interests

Robotics   Interested in bringing textbook physics and programming to life through robotics as a co-curricular activity

Stargazing   Occasionally find myself strolling alone enjoying the night sky.

Reading   Have always loved reading mostly detective and mystery light novels.

Sci. Comm.   Regularly promote physics as a basic science to school students by showcasing interesting science experiments

Languages

English   Professional proficiency

Odia   Native proficiency

Hindi   Conversational proficiency