Deven Misra

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Contact Information

Kavli Institute for the Physics and Mathematics of the Universe
The University of Tokyo
5-1-5 Kashiwanoha
Kashiwa City, Chiba Prefecture
277-8583, Japan

Research Interests

Experimental particle physics: heavy flavor physics, machine learning, high-granularity calorimetry, fast electronics, and FPGA firmware development.

Current Academic Appointments

Graduate Student, The University of Tokyo — Oct. 2024 to present
Department of Physics

- Affiliations:
  - Kavli Institute for the Physics and Mathematics of the Universe (IPMU)
  - High Energy Accelerator Research Organization (KEK)
  - Center for Data-Driven Discovery (CD3)

Previous Academic Appointments

Research Assistant, Reed College — Oct. 2023 to Oct. 2024
Department of Physics

- Supervisor: Prof. Noah Charles

SULI Intern, Pacific Northwest National Laboratory — Sept. 2023 to Apr. 2024
Data Science & Machine Intelligence Group

- Supervisor: Dr. Jan Strube

Research Assistant, Reed College — May 2022 to Sept. 2022
Department of Physics

- Supervisor: Prof. Noah Charles

Visiting Undergraduate Researcher, Johns Hopkins University — May 2019 to Sept. 2019
Robot and Protein Kinematics Laboratory

- Supervisor: Prof. Gregory Chirikjian

Education

The University of Tokyo, Bunkyō-ku, Tokyo, JP

Ph.D. in Physics, Expected June 2029

- Thesis Topic:
- Adviser: Prof. Takeo Higuchi
- Area of Study: Experimental Particle Physics

M.S. in Physics, Expected June 2026

- Thesis Topic: *Fast Machine Learning for the Belle II L1 Trigger*
- Adviser: Prof. Takeo Higuchi
- Area of Study: Experimental Particle Physics

Reed College, Portland, Oregon, US

B.S. in Physics, May 2022

- Thesis: *Multipole Moments of the Weyl-Lewis-Papapetrou Metric for an Axisymmetric Ring*
- Adviser: Prof. Joel Franklin

Refereed Conference Publications

[1] H. Wu, **D. Misra** and G. S. Chirikjian, "Is That a Chair? Imagining Affordances Using Simulations of an Articulated Human Body," 2020 IEEE International Conference on Robotics and Automation (ICRA), Paris, France, 2020, pp. 7240-7246, doi: 10.1109/ICRA40945.2020.9197384.

Conference Posters

[2] **D. Misra**, O. Lee, H. Saberhagen, D. Schroeter and N. Charles, "Geometrically Disordered Network Models for the Integer Quantum Hall Transition via Loop Diagram Insertions", 2024 APS March Meeting, Minneapolis, Minnesota, USA, 2024.

Other Publications

[3] **D. Misra**, *Multipole Moments of the Weyl-Lewis-Papapetrou Metric for an Axisymmetric Ring*. Bachelor's Thesis, Reed College, Portland, OR, 2022.

Talks & Presentations

[1] "Geometrically Disordered Network Models for the Integer Quantum Hall Transition via Loop Diagram Insertions", American Physical Society March Meeting, March 2024.

[2] "Angle Reconstruction in High-Granularity Calorimeters with Graph Neural Networks", Pacific Northwest National Laboratory Research Symposium, April 2023.

[3] "Calorimeter Energy Reconstruction with Machine Learning, Pacific Northwest National Laboratory Research Symposium", December 2022.

[4] "Axisymmetric Ring Sources in General Relativity", Reed College Physics Seminar, May 2022.

Teaching Experience

Reed College, Portland, Oregon, US

Grader Jan. 2024 to May 2024

- Graded weekly assignments for Quantum Mechanics I (Physics 342).

Awards

The University of Tokyo, Bunkyō-ku, Tokyo, JP

- Global Science Graduate Course Scholarship, 2024 – 2029

Skills

Languages: Python, Mathematica, LaTeX
Libraries: PyTorch, PyG, Brevitas, Uproot, NumPy, SciPy, Matplotlib, pandas, scikit-learn, hls4ml
Software: DD4hep, ROOT

Citizenship

United States of America