

# 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	<p><b>Experimental particle physics:</b> heavy flavor physics, machine learning, and FPGA firmware development.</p> <p><b>Accelerator physics:</b> real-time modeling, beam-based optimization, and accelerator control.</p> <p><b>Condensed matter physics:</b> quantum phase transitions, percolation theory, nonlinear sigma models, and representation theory.</p>	
CURRENT ACADEMIC APPOINTMENTS	<b>Graduate Student, The University of Tokyo</b> Department of Physics <ul style="list-style-type: none"><li>Affiliations:<ul style="list-style-type: none"><li>Kavli Institute for the Physics and Mathematics of the Universe (IPMU)</li><li>High Energy Accelerator Research Organization (KEK)</li><li>Center for Data-Driven Discovery (CD3)</li></ul></li></ul>	Oct. 2024 to present
PREVIOUS ACADEMIC APPOINTMENTS	<b>Research Assistant, Reed College</b> Department of Physics <ul style="list-style-type: none"><li>Supervisor: Prof. Noah Charles</li></ul> <b>SULI Intern, Pacific Northwest National Laboratory</b> Data Science & Machine Intelligence Group <ul style="list-style-type: none"><li>Supervisor: Dr. Jan Strube</li></ul> <b>Research Assistant, Reed College</b> Department of Physics <ul style="list-style-type: none"><li>Supervisor: Prof. Noah Charles</li></ul> <b>Visiting Undergraduate Researcher, Johns Hopkins University</b> Robot and Protein Kinematics Laboratory <ul style="list-style-type: none"><li>Supervisor: Prof. Gregory Chirikjian</li></ul>	Oct. 2023 to Oct. 2024 Sept. 2023 to Apr. 2024 May 2022 to Sept. 2022 May 2019 to Sept. 2019
EDUCATION	<b>The University of Tokyo, Bunkyo-ku, Tokyo, JP</b> M.S. in Physics, Expected September 2026 <ul style="list-style-type: none"><li>Thesis Topic: <i>Low-Latency On-Chip <math>\tau</math> Event Selection with Machine Learning for the Belle II Level-1 Trigger</i></li><li>Adviser: Prof. Takeo Higuchi</li><li>Area of Study: Experimental Particle Physics</li></ul> <b>Reed College, Portland, Oregon, US</b> B.S. in Physics, May 2022 <ul style="list-style-type: none"><li>Thesis: <i>Multipole Moments of the Weyl-Lewis-Papapetrou Metric for an Axisymmetric Ring</i></li><li>Adviser: Prof. Joel Franklin</li></ul>	

REFEREED CONFERENCE PUBLICATIONS	[1] H. Wu, <b>D. Misra</b> 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] <b>D. Misra</b> , 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] <b>D. Misra</b> , <i>Multipole Moments of the Weyl-Lewis-Papapetrou Metric for an Axisymmetric Ring</i> . Bachelor's Thesis, Reed College, Portland, OR, 2022.
TALKS & PRESENTATIONS	[1] "Low-Latency On-Chip $\tau$ Event Selection with Machine Learning for the Belle II Level-1 Trigger", ML4FE Workshop, University of Hawaii, May 2025. [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	<b>Reed College</b> , Portland, Oregon, US <i>Grader</i> Jan. 2024 to May 2024 • Graded weekly assignments for Quantum Mechanics I (Physics 342).
AWARDS	<b>The University of Tokyo</b> , Bunkyo-ku, Tokyo, JP • Global Science Graduate Course Scholarship, 2024 – 2029
SKILLS	<b>Languages:</b> Python, Julia, C++, Mathematica, LaTeX <b>Libraries:</b> PyTorch, PyG, Brevitas, TensorFlow, JAX, Keras, QKeras, HGQ, hls4ml <b>Software:</b> ROOT, DD4hep, Vitis, Vivado
CITIZENSHIP	United States of America