

# KRISH DESAI, PHD

Employment: Machine Learning Researcher  
Lawrence Berkeley National Laboratory

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## Education

August 2020 – August 2025 University of California, Berkeley  
*Ph.D., Physics*

August 2017 – May 2020 Yale University  
*M.S., Mathematics*  
*B.S., Mathematics (Intensive)*  
*B.S., Physics (Intensive)*

## Professional Experience

June 2023 – August 2023 Bridgewater Associates  
*Investment Analyst Intern*

May 2022 – August 2022 Microsoft Research  
*PhD Research Intern*

September 2020 – May 2025 Lawrence Berkeley National Lab  
*Machine Learning Researcher*

May 2020 – July 2020 Purple Gaze Inc.

## Publications

- December 2025 Machine Learning-based Unfolding for Cross Section Measurements in the Presence of Nuisance Parameters  
Huanbiao Zhu, **Krish Desai**, Mikael Kuusela, Vinicius Mikuni, Benjamin Nachman, and Larry Wasserman  
*arXiv:2512.07074*  
[PDF](#) [BIBLATEX](#)
- November 2025 Unsupervised Evaluation of Multi-Turn Objective-Driven Interactions  
Emi Soroka, Tanmay Chopra, **Krish Desai**, and Sanjay Lall  
*arXiv:2511.03047*  
[PDF](#) [BIBLATEX](#)
- October 2025 Unbinned Inference with Correlated Events  
**Krish Desai**, Owen Long, and Benjamin Nachman  
*European Physical Journal C*  
[PDF](#) [BIBLATEX](#)
- September 2025 Neural Posterior Unfolding  
Fernando Torales Acosta, Jay Chan, **Krish Desai**, Vinicius Mikuni, Benjamin Nachman, Jingjing Pan, Francesco Rubbo  
*arXiv:2509.06370*  
[PDF](#) [BIBLATEX](#)
- August 2025 Machine Learning Methods for Cross Section Measurements  
**Krish Desai**  
*University of California, Berkeley*  
PhD (Physics) Dissertation  
[PDF](#) [BIBLATEX](#)
- December 2024 Multidimensional Deconvolution with Profiling  
Huanbiao Zhu, **Krish Desai**, Mikael Kuusela, Vinicius Mikuni, Benjamin Nachman, and Larry Wasserman

*Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), ML4PS Track*

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December 2024

Neural Posterior Unfolding

Fernando Torales Acosta, Jay Chan, **Krish Desai**,  
Vinicius Mikuni, Benjamin Nachman, and Jingjing Pan

*Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), ML4PS Track*

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December 2024

Moment Unfolding: Moment extraction using an unfolding protocol without binning

**Krish Desai**, Benjamin Nachman, and Jesse Thaler

*Physical Review D*

[PDF](#)    [BIBLATEX](#)

December 2022

Deconvolving Detector Effects for Distribution Moments

**Krish Desai**, Benjamin Nachman, and Jesse Thaler

*Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS), ML4PS Track*

[PDF](#)    [BIBLATEX](#)

May 2022

SymmetryGAN: Symmetry Discovery with Deep Learning

**Krish Desai**, Benjamin Nachman, and Jesse Thaler

*Physical Review D*

[PDF](#)    [BIBLATEX](#)

December 2021

Oblivious points on translation surfaces

Ian Adelstein, **Krish Desai**, Anthony Ji, and Grace Zdeblick

*Journal of Geometry*

[PDF](#)    [BIBLATEX](#)

December 2021

Symmetry Discovery with Deep Learning

**Krish Desai**, Benjamin Nachman, and Jesse Thaler

*Thirty-Fifth Annual Conference on Neural Information Processing Systems (NeurIPS), ML4PS Track*

[PDF](#)    [BIBLATEX](#)

April 2020 Padé Approximants and the Anharmonic Oscillator

**Krish Desai**

*Yale University*

BS and MS (Mathematics, Intensive) Thesis

PDF     *BIBLATEX*

## Honors & Fellowships

- 2025 Full Member of Sigma Xi  
*Sigma Xi*  
Election to the nation's oldest academic honor society
- 2020 Howard L. Schultz Prize  
*Yale University*  
The most outstanding graduating senior in physics
- 2020 Distinction in Mathematics  
*Yale University*
- 2020 Distinction in Physics  
*Yale University*
- 2020 Lifetime Member of Sigma Pi Sigma  
*Sigma Pi Sigma*  
Election to the national physics honor society
- 2020 George J. Schulz Summer Fellowship  
*Yale University Chapter*
- 2019 Howard Robert Topol Fellowship  
*Yale University*
- 2018 James A. Helzer Fellowship  
*Yale University*
- 2018 SUMRY Fellowship  
*Yale University*

- 2018 Yale First-Year Research Fellowship  
*Yale University*
- 2018 Benjamin F. Barge Prize  
*Yale University*  
Most outstanding first-year student in mathematics

## Talks

- December 2024 Neural Posterior Unfolding  
*Thirty-Eighth Annual Conference on Neural Information Processing Systems*  
Vancouver, Canada
- December 2024 Multidimensional Deconvolution with Profiling  
*Thirty-Eighth Annual Conference on Neural Information Processing Systems*  
Vancouver, Canada
- July 2024 CMS Seminar  
*CERN*  
Geneva, Switzerland
- June 2024 Moment extraction using an unfolding protocol without binning  
*PHY-STAT Unfolding Conference*  
Paris, France
- December 2022 Deconvolving Detector Effects for Distribution Moments  
*Thirty-Sixth Annual Conference on Neural Information Processing Systems*  
New Orleans, LA
- November 2022 Moment Unfolding with Deep Learning  
*Machine Learning for Jets*  
New Brunswick, NJ
- June 2022 High Energy Physics Seminar

*Korea Institute for Advanced Study*

Seoul, South Korea

- April 2022    Moment Unfolding using Deep Learning  
*American Physical Society*  
New York, NY
- December 2021    Symmetry Discovery with Deep Learning  
*Thirty-Fifth Annual Conference on Neural Information Processing Systems*  
Virtual
- November 2021    Introduction to Symmetry Discovery and Deep Learning  
*Berkeley Compass Lecture*  
Berkeley, CA
- October 2021    Symmetry Discovery and Deep Learning  
*Clarifai Perceive Deep Learning AI Conference*  
Virtual
- July 2021    SymmetryGAN  
*Machine Learning for Jets*  
Heidelberg, Germany
- April 2021    Symmetry Discovery  
*Lawrence Berkeley National Laboratory, Physics Division Seminar*  
Virtual
- April 2021    Symmetry Discovery using Machine Learning  
*American Physical Society*  
Virtual
- August 2019    Oblivious Points on Translation Surfaces  
*Young Mathematicians Conference*  
Columbus, OH
- August 2019    Closed Geodesics on Translation Surfaces

## Teaching

Fall 2024	PHYSICS 77: Introduction to Computational Techniques in Physics <i>Associate Instructor</i> University of California, Berkeley
Fall 2024	PHYSICS 88: Data Science Applications in Physics <i>Associate Instructor</i> University of California, Berkeley
Summer 2024	PHYSICS 77: Introduction to Computational Techniques in Physics <i>Associate Instructor</i> University of California, Berkeley
Fall 2023	PHYSICS 89: Introduction to Mathematical Physics <i>Associate Instructor</i> University of California, Berkeley
Summer 2023	PHYSICS 77: Introduction to Computational Techniques in Physics <i>Associate Instructor</i> University of California, Berkeley
Fall 2022	PHYSICS 77: Introduction to Computational Techniques in Physics <i>Associate Instructor</i> University of California, Berkeley
Fall 2022	PHYSICS 88: Data Science Applications in Physics <i>Associate Instructor</i> University of California, Berkeley
Spring 2022	PHYSICS 8B: Introductory Physics

*Head Associate Instructor*

University of California, Berkeley

Summer 2021 PHYSICS 7B: Physics for Scientists and Engineers

*Associate Instructor*

University of California, Berkeley

Spring 2021 PHYSICS 7B: Physics for Scientists and Engineers

*Associate Instructor*

University of California, Berkeley

Fall 2020 PHYSICS 7B: Physics for Scientists and Engineers

*Associate Instructor*

University of California, Berkeley

## Leadership & Service

2025 Invited Peer Reviewer

Nature, Scientific Reports

2025 Invited Peer Reviewer

Journal of High Energy Physics

2023-2025 Graduate Mentor

Math and Physical Sciences Scholars, UC Berkeley

2022, 2024, 2025 Invited Peer Reviewer

NeurIPS

2022-2024 Campus Affairs Vice President, and Rules Officer

UC Berkeley Graduate Assembly

2023 Research Mentor

UC Berkeley Physics Innovators Program

2021 – 2024 Committee Member

UC Berkeley Physics Faculty Search

2018-2019 Vice President

## Skills

Programming Languages	Python	Julia	C
Machine Learning	TensorFlow/Keras	PyTorch	scikit-learn
	Deep Learning	Bayesian Methods	Generative Models
Data Science	Statistical Inference	Bayesian Statistics	Monte Carlo
	Unfolding	Deconvolution	
Physics & Mathematics	Particle Physics	Quantum Field Theory	Stochastic Calculus
	Operator Theory	Differential Geometry	
Computing	HPC	Git	Docker
Languages	English	French	Hindi
	Gujarati		