

Evan Coleman

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EDUCATION

Stanford University, Stanford, CA

Ph.D. in Theoretical Physics

2018 – 2022

- Thesis: Finite-Volume Holography and the Cosmological Constant
- Advisor: Eva Silverstein

Brown University, Providence, RI

Sc.B. (Honors) in Mathematical Physics

2014 – 2018

- Magna Cum Laude, Sigma Xi, Top of Class (Physics)
- Cumulative GPA: 4.00 / 4.00
- Physics GRE: 970 / 990

EXPERIENCE

MIT Climate Project, Research Scientist II

2024 – Present

MIT Climate & Sustainability Consortium, Postdoctoral Fellow

2022 – 2024

Stanford Institute for Theoretical Physics, NSF Graduate Research Fellow

2018 – 2022

CERN, Undergraduate Researcher

2015 – 2018

- Research on Applied ML for industrial decarbonization, *in situ* material characterization, and LLM-guided climate and materials science research planning.
- 3 ML conference publications applying VAEs, physics-informed models, and RL to structured prediction and measurement of soil contents. Recent ICML publication applying RL to NMR pulse sequence optimization for low-field atomic abundance measurement, and AAAI2026 publication applying generative models to geospatial infilling of subsurface resource maps.
- Experience handling high-dimensional features and datasets (hyperspectral remote sensing, continent-scale geospatial analysis), training policies and models, developing OpenAI gymnasium environments applying parallelized physical simulations, and incorporating LLM evaluation into training and evaluation pipelines.
- Current projects on scalable direct soil property inference down to 45cm depth via fusion of hyperspectral satellite and ground-based imaging data, and agentic interfaces for scientific ontologies. Recipient of Cohere for AI Research Grant, applying LLMs to these tasks.
- Experience directing student researchers at varying levels of experience (1 Ph.D., 3 M.Eng., 2 B.S.) from project conception to a thesis or peer-reviewed publication.

PUBLICATIONS

PUBLISHED

- [1] S. Nair*, E. Coleman*, S. Wang, and E. Olivetti, “Masked Mineral Modeling: Continent-scale mineral prospecting via geospatial infilling,” accepted to AAAI2026.
- [2] R. Shenoy*, E. Coleman*, H. Gaensbauer, and E. Olivetti, “Counting atoms faster: policy-based nuclear magnetic resonance pulse sequencing for atomic abundance measurement,” accepted to ICML2025.
- [3] R. Shenoy, H. Gaensbauer, E. Olivetti, and E. Coleman, “Optimizing NMR Spectroscopy Pulse Sequencing for Soil Atomic Abundance,” in *Proceedings of “Tackling Climate Change with Machine Learning” at NeurIPS2024*.
- [4] E. Coleman, S. Nair, X. Zeng, and E. Olivetti, “Structured spectral reconstruction for scalable soil organic carbon inference,” in *Proceedings of “Tackling Climate Change with Machine Learning” at ICLR2024*.
- [5] E. Coleman, R.M. Soni, and S. Yang. “On the spread of entanglement at finite cutoff.” *Journal of High Energy Physics*, 2023(5), 1-28.
- [6] E. Coleman, E. Mazenc, V. Shyam, E. Silverstein, R.M. Soni, G. Torroba, and S. Yang. “De Sitter microstates from $T\bar{T} + \Lambda_2$ and the Hawking-Page transition.” *Journal of High Energy Physics*, 2022(7), 1-32.
- [7] J. Aguilera-Damia, L.M. Anderson, and E. Coleman. “A substrate for brane shells from $T\bar{T}$.” *Journal of High Energy Physics*, 2021(5), 1-36.

- [8] E. Coleman and V. Shyam. “Conformal boundary conditions from cutoff AdS₃.” *Journal of High Energy Physics*, 2021(9), 1-19.
- [9] E. Coleman, J. Aguilera-Damia, D.Z. Freedman, and R.M. Soni. “ $T\bar{T}$ -deformed actions and (1,1) supersymmetry.” *Journal of High Energy Physics*, 2019(10), 1-16.
- [10] E. Coleman, M. Freytsis, A. Hinzmann, M. Narain, J. Thaler, N. Tran, N., and C. Vernieri. “The importance of calorimetry for highly-boosted jet substructure.” *Journal of Instrumentation*, 13(01), T01003.

WHITEPAPERS

- [11] K. Daehn, E. Coleman, and F. Allroggen, “Global Bioenergy Availability,” published on *MIT DSpace*. In collaboration with Maersk. January 2025.
- [12] M. MacFarlane, R. Jia, ..., E. Coleman, E. Olivetti, and C. Terrer, “Nature-Based Climate Solutions: Current Uncertainties and Data Gaps in the Assessment of Soil Carbon Sequestration Potentials,” published on *MIT DSpace*. In collaboration with Apple, Cargill, and PepsiCo. April 2024.
- [13] E. Coleman, A. Tripathy, S. Sroka, et al., “Carbon Credits and Credibility: A Collaborative Endeavour,” published on *MIT DSpace*. In collaboration with IBM and BBVA. September 2023.

AWARDS & SCHOLARSHIPS	<ul style="list-style-type: none"> ▪ Cohere for AI Research Grant Awarded 1M Chat API calls for LLM research developing agentic workflows for scientific databases ▪ Impact Fellowship, MIT 2-year grant to pursue independent postdoctoral research in industrial decarbonization ▪ Paul H. Kirkpatrick Award for Teaching, Stanford Physics Department Top 5 Stanford Physics TA of 2021 ▪ Youth Philanthropist of the Year, National Philanthropy Day Committee Cycled 600 mi across Tibet for charity, from Lhasa to Everest base camp to Kathmandu in 10 days ▪ NSF Graduate Research Fellowship, National Science Foundation \$138K grant to pursue Ph.D. ▪ R. Bruce Lindsay Prize for Excellence in Physics Top student in Class of '18, Brown U. Physics Department ▪ Astronaut Scholar Merit-based scholarship ▪ Goldwater Scholar Merit-based scholarship 	2025 2022 2022 2018 2018 2018 2017 2017
PROFESSIONAL ACTIVITIES	REVIEWING	
	<ul style="list-style-type: none"> ▪ Reviewer, AAAI2026 ▪ Reviewer, Climate Change AI @ NeurIPS2024 ▪ Reviewer, NSF SBIR Phase I 	2025 2024 2023
	CONFERENCE ORGANIZATION	
	<ul style="list-style-type: none"> ▪ Lead Organizer, Data for Circularity Workshop, MCSC Annual Symposium ▪ Lead Organizer, ML for Climate Workshop, MCSC Annual Symposium 	Oct 2023 Oct 2022
	COMMUNITY SERVICE	
	<ul style="list-style-type: none"> ▪ Volunteer farmhand, Stanford Educational Farm ▪ Exam proctor for blind students, Stanford Physics Department 	2020 – 2022 2022
TEACHING	Head Teaching Assistant, Stanford University PHYSICS121: Advanced Electricity and Magnetism Head Teaching Assistant, Stanford University PHYSICS70: Introduction to Special Relativity and Quantum Mechanics Teaching Assistant, Stanford University PHYSICS40: Introduction to Classical Mechanics	2020 2019 2019
ADVISING & MENTORSHIP	Margaret Wang Thesis supervisor.	M.Eng. (MIT EECS) '25

Rohan Shenoy	B.S. (UC Berkeley EECS) '26
Sujay Nair	B.S. (Georgia Tech EECS) '26
Hans Gaensbauer	Ph.D (MIT EECS) '26
Jenny Moralejo	M.Eng. (MIT EECS) '24
Thesis supervisor. Now at Palantir.	
Xinyi Zeng	M.Eng. (MIT CEE) '23
Thesis supervisor. Now at Coho Climate Advisors.	

LANGUAGES

- English: Native language.
- Spanish: Fluent (speaking, reading, writing).
- Portuguese: Intermediate (reading); basic (speaking, writing).

[CV compiled on 2025-11-19]