

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

- Cohere for AI Research Grant 2025
Awarded 1M Chat API calls for LLM research developing agentic workflows for scientific databases
- Impact Fellowship, MIT 2022
2-year grant to pursue independent postdoctoral research in industrial decarbonization
- Paul H. Kirkpatrick Award for Teaching, Stanford Physics Department 2022
Top 5 Stanford Physics TA of 2021
- Youth Philanthropist of the Year, National Philanthropy Day Committee 2018
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 2018
\$138K grant to pursue Ph.D.
- R. Bruce Lindsay Prize for Excellence in Physics 2018
Top student in Class of '18, Brown U. Physics Department
- Astronaut Scholar 2017
Merit-based scholarship
- Goldwater Scholar 2017
Merit-based scholarship

PROFESSIONAL ACTIVITIES

REVIEWING

- Reviewer, AAAI2026 2025
- Reviewer, Climate Change AI @ NeurIPS2024 2024
- Reviewer, NSF SBIR Phase I 2023

CONFERENCE ORGANIZATION

- Lead Organizer, Data for Circularity Workshop, MCSC Annual Symposium Oct 2023
- Lead Organizer, ML for Climate Workshop, MCSC Annual Symposium Oct 2022

COMMUNITY SERVICE

- Volunteer farmhand, Stanford Educational Farm 2020 – 2022
- Exam proctor for blind students, Stanford Physics Department 2022

TEACHING

- Head Teaching Assistant, Stanford University 2020
PHYSICS121: Advanced Electricity and Magnetism
- Head Teaching Assistant, Stanford University 2019
PHYSICS70: Introduction to Special Relativity and Quantum Mechanics
- Teaching Assistant, Stanford University 2019
PHYSICS40: Introduction to Classical Mechanics

ADVISING & MENTORSHIP

- Margaret Wang M.Eng. (MIT EECS) '25
Thesis supervisor.

Rohan Shenoy

Sujay Nair

Hans Gaensbauer

Jenny Moralejo

Thesis supervisor. Now at Palantir.

Xinyi Zeng

Thesis supervisor. Now at Coho Climate Advisors.

B.S. (UC Berkeley EECS) '26

B.S. (Georgia Tech EECS) '26

Ph.D (MIT EECS) '26

M.Eng. (MIT EECS) '24

M.Eng. (MIT CEE) '23

LANGUAGES

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

[CV compiled on 2025-11-19]