

Christian Pratt

Physics Ph.D. Candidate
University of California, Davis

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Education

2021 —	Ph.D. <i>Physics</i> University of California, Davis Advisor: Prof. James P. Crutchfield <i>Expected graduation date:</i> Spring 2026
2022	M.Sc. <i>Physics</i> University of California, Davis
2021	B.Sc. <i>Physics</i> University of California, Davis
2019	A.A. <i>Mathematics</i> San Diego Community College District

Research Positions

2022 —	Graduate student researcher Complexity Sciences Center University of California, Davis Advisor: Prof. James P. Crutchfield
2019 - 2021	Undergraduate research student Experimental particle physics University of California, Davis Advisor: Prof. Michael Mulhearn

Publications

- 2025 **C. Z. Pratt**, K. J. Ray, and J. P. Crutchfield. Controlled erasure as a building block for universal thermodynamically robust superconducting computing. *Chaos*. [10.1063/5.0227130](https://doi.org/10.1063/5.0227130)
- 2025 **C. Z. Pratt**, K. J. Ray, and J. P. Crutchfield. Extracting equations of motion from superconducting circuits. *Physical Review Research*. [10.1103/PhysRevResearch.7.013014](https://doi.org/10.1103/PhysRevResearch.7.013014)
- 2021 J. Swaney, M. Mulhearn, **C. Z. Pratt**, C. Shimmin, and D. Whiteson. Measurement of smartphone sensor efficiency to cosmic ray muons. [arXiv:2107.06332](https://arxiv.org/abs/2107.06332)

Presentations

- 2025 Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing. *APS March Meeting 2025*. Anaheim, California.
- 2024 [Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing](#). Technical seminar. Complexity Sciences Center, University of California, Davis.
- 2024 Universal Dynamical Computing on the Nanoscale. *Dynamic Days 2024*. Davis, California.
- 2023 Universal Dynamical Computing on the Nanoscale. *Information Engines at the Frontiers of Nanoscale Thermodynamics*. Telluride, Colorado.
- 2023 Equations of Motion for Dynamical Computing. *Army Research Office on-site visit*. Complexity Sciences Center, University of California, Davis.

Teaching

- 2025 University of California, Davis: Teaching Assistant
256A: Physics of Information
256B: Physics of Computation
- 2021 - 2022 University of California, Davis: Teaching Assistant
7B: Fluid mechanics, electrical circuits, Newtonian mechanics
7C: Modern physics, waves, optics
9A: Classical mechanics

Awards & Honors

Winter 2025, Spring 2024, Spring 2023	Graduate Student Researcher Fellowship Department of Physics and Astronomy University of California, Davis
2018	NASA Community College Aerospace Scholar
2016 - 2019	Dean's Honors List San Diego Community College District

Service and Outreach

2020 - 2021	Mentor, Support Encourage and Develop For Children (SendForC)
2018	Volunteer, New Story Charity
2017 - 2018	Volunteer, San Diego Rescue Mission
2016 - 2018	Volunteer, San Diego Air and Space Museum

Last updated: April 8, 2025