

Christian Pratt

Physics Ph.D. Candidate
University of California-Davis

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Education

2021 — Ph.D. *Physics*
University of California-Davis
Advisor: Prof. James Crutchfield

2022 M.Sc. *Physics*
University of California-Davis

2021 B.Sc. *Physics*
University of California-Davis

2019 A.A. *Mathematics*
San Diego Community College District

Research Positions

2022 — Graduate student researcher
[Complexity Sciences Center](#)
University of California-Davis
Advisor: Prof. James Crutchfield

2019 - 2021 Undergraduate research student
Experimental particle physics
University of California-Davis
Advisor: Prof. Michael Mulhearn

Publications

2024 **C. Z. Pratt**, K. J. Ray and J. P. Crutchfield. Controlled Erasure as a Building Block for Universal Thermodynamically-Robust Superconducting Computing. *Under peer review*. [arXiv:2406.12153](https://arxiv.org/abs/2406.12153)

2023 **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

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 Graduate Student Researcher Fellowship
Department of Physics and Astronomy
University of California-Davis

Spring 2024 Graduate Student Researcher Fellowship
Department of Physics and Astronomy
University of California-Davis

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

2024	Physics tutor, Cal-Bridge
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: February 12, 2025