



ADITYA DHUMUNTARAO

NSF Graduate Research Fellow · Quantum Computing ∩ AI/ML · U.S. Citizen

OVERVIEW

My mission is to advance research in quantum information science and quantum computing with neural networks, machine learning algorithms, and using cutting-edge models of quantum gravity. Highly detailed oriented with strong mathematical and computational problem solving skills resulting in several lead-authored publications, contributions to academic conferences, and (inter)national collaborations at MIT, the Perimeter Institute, and University of Cambridge.

EDUCATION &

HONORS

University of Minnesota, School of Physics and Astronomy **Sept 2022**
Ph.D., PHYSICS, *Holography: Bridging Quantum Gravity and Quantum Information* ABD

University of Cambridge, Churchill College **May 2017**
MASTERS IN ADVANCED STUDY, PART III OF THE MATHEMATICAL TRIPPOS HONORS

Arizona State University, Barrett the Honors College **June 2016**
B.S. IN MATHEMATICS & B.S. IN PHYSICS HONORS

TRAINING & EMPLOYMENT

Princeton – Institute for Advanced Study, Prospects in Theoretical Physics **June 2018**
SELECTED PARTICIPANT: *From Qubits to Spacetime Summer Program*
Perimeter Institute for Theoretical Physics, Afshordi Group **2017–2018**
VISITING RESEARCHER: *Conducted research in quantum field theory on curved spacetimes*
Origins Project Fellow, The Origins Project **2017–2018**
UNDERGRADUATE RESEARCHER: *Conducted research in quantum field theory on curved spacetimes*

Summer Internship, University of Minnesota, Minneapolis, MN, USA **June-Aug 2015**
Summer Internship, Arizona State University, Tempe, AZ, USA **June-Aug 2014**

PUBLICATIONS

7. **Dhumuntarao, A.**, Folkestad, Å. F., (2022) *Holographic Growth Bounds on Quantum Entanglement*, [To Appear].
6. **Dhumuntarao, A.**, Mahbub, R., (2022) *Gravitational Instabilities of Uniform Black Strings in AdS*, *Phys. Rev. D* **105**, L041501 [[arXiv:2110.08334](https://arxiv.org/abs/2110.08334)].
5. **Dhumuntarao, A.**, Mann, R., (2021) *Criticality of lower dimensional AdS_d black holes*, *Phys. Rev. D* **104**, 064006 [[arXiv:2106.04087](https://arxiv.org/abs/2106.04087)].
4. Cherman, A., **Dhumuntarao, A.**, (2021) *Confinement and graded partition functions for N = 4 SYM*, *Phys. Rev. D* **103**, 066013 [[arXiv:2012.12341](https://arxiv.org/abs/2012.12341)].
3. **Dhumuntarao, A.**, Kapusta, J., Plumberg, C., (2020) *Randall-Sundrum Model with a Dilaton Field at Finite Temperature*, *Phys. Rev. D* **101**, 066023 [[arXiv:2001.00038](https://arxiv.org/abs/2001.00038)].
2. Bartz, S. P., **Dhumuntarao, A.**, Kapusta, J., (2018) *Dynamical AdS/Yang-Mills model*, *Phys. Rev. D* **98**, 026019 [[arXiv:1801.06118](https://arxiv.org/abs/1801.06118)].
1. Tang, W., **Dhumuntarao, A.**, (2015) *Bistability in Inhomogeneity-Effects of Flow Coherent Structures on the Fate of a Bistable Reaction*, *AIP. Physics of Fluids* **27**, 076601 [[arXiv:1801.06118](https://arxiv.org/abs/1801.06118)].

SKILLS

Languages: MATLAB/OCTAVE, PYTHON (NUMPY, SCIPY), MATHEMATICA, JAVA, C++, FORTRAN, BASH, HTML, CSS, LATEX.
Programs: EMACS, GIT, UNIX/LINUX, WINDOWS,

Software—Author of NotesTeX LATEX package (<https://github.com/Adhumunt/NotesTeX>).

CONTACT INFORMATION

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<https://github.com/Adhumunt>
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NATIONAL AWARDS & HONORS	UMN Graduate School, Doctoral Dissertation Fellowship National Science Foundation, Graduate Research Fellowship Award Physics Department, Outstanding Undergraduate Award Mathematics Department, Charles Wexler Mathematics Prize Origins Foundation, Origins Project Award National Science Foundation, Summer Research Grant , [1460141] Physics Department, Jack H. Hawes Mathematics Scholar Society of Physics Students, National Leadership Award Physics Department, Arek Dieterle Memorial Award Physics Department, Motil Travel Award National Science Foundation, Summer Research Grant , [1148771] President's Award, New American Merit Scholar	2021–2022 2018–2021 2016 2015 2014 2011
TEACHING EXPERIENCE	Graduate Teaching Assistant , University of Minnesota Phys. 1301, General Physics I	Spring 2018
	Undergraduate Teaching Assistant , Arizona State University General Physics: Electricity and Magnetism Mathematical Methods in Physics II Mathematical Methods in Physics II Quantum Mechanics II Statistical and Thermal Physics	Fall 2016 Spring 2015 Fall 2016 Spring 2016 Fall 2015
PROFESSIONAL ACTIVITIES, OUTREACH, AND SERVICE	American Physical Society, member Division of Gravitational Physics Outreach Volunteer at <i>Open Arms</i> , Prepared meals for persons with life threatening illnesses in Minneapolis, Minnesota Volunteer at <i>Our Hearts Your Soles</i> , Provided examinations and free shoes to homeless persons in Minneapolis, Minnesota UNIVERSITY OF CAMBRIDGE, CHUTALK <i>Black Holes and the Information Paradox.</i>	2019–Present 2019 – 2020 November 2019 March 2017
	OPERATIONS DIRECTOR AND FOUNDING MEMBER OF TEDxASU	Esta. 2016