



ADITYA DHUMUNTARAO

NSF Graduate Research Fellow · Quantum Computing \cap 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 TRIPOS 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](#)].
5. **Dhumuntarao, A.**, Mann, R., (2021) *Criticality of lower dimensional AdS_d black holes*, *Phys. Rev. D* **104**, 064006 [[arXiv:2106.04087](#)].
4. Cherman, A., **Dhumuntarao, A.**, (2021) *Confinement and graded partition functions for $\mathcal{N} = 4$ SYM*, *Phys. Rev. D* **103**, 066013 [[arXiv: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](#)].
2. Bartz, S. P., **Dhumuntarao, A.**, Kapusta, J., (2018) *Dynamical AdS/Yang-Mills model*, *Phys. Rev. D* **98**, 026019 [[arXiv: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](#)].

SKILLS

Languages: MATLAB/OCTAVE, PYTHON (NUMPY, SCIPY), MATHEMATICA, JAVA, C++, FORTRAN, BASH, HTML, CSS, L^AT_EX.

Programs: EMACS, GIT, UNIX/LINUX, WINDOWS,

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

CONTACT INFORMATION

6 Canal Park, Cambridge
Massachusetts, 02141
480-370-3580

<https://dhuality.com>
<https://github.com/Adhumunt>
dhumu002@umn.edu

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

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