Kabir Rohit Khanna

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Education

Sep 2023 – Present **University of Massachusetts, Amherst** *PhD. (Physics)*
Supervisor: Prof. Romain Vasseur
Coursework: - Advanced Statistical Physics (Renormalization Group)

Oct 2022 - Jun 2023 **University of Oxford** *Wadham College, Oxford, UK*
MSc. Mathematical and Theoretical Physics
Overall grade: Distinction || Dissertation: Distinction
Coursework:
- Quantum Field Theory
- Advanced Quantum Theory
- Groups and Representations
- Topological Quantum Theory
- Introduction to Quantum Information
- Quantum Matter 1
- Non-equilibrium Statistical Physics
- Quantum Matter 2

Aug 2017 – May 2022 **Indian Institute of Technology Madras** *Chennai, Tamil Nadu*
Dual Degree - B.Tech in Engg. Design + M.Tech in Quantum Science & Technology
CGPA: 9.41/10 - Rank: 3/57
Relevant coursework: Grade Scale: 10
- General Relativity and Cosmology
- Q. Computation and Information
- Mathematical Physics 2
- Stochastic Processes

Publications

[1] [*In preparation*] **Kabir Khanna**, Romain Vasseur, and Andreas W. W. Ludwig *Random Quantum Circuits with Time-Reversal Symmetry*

[2] Raghvendra Singh, **Kabir Khanna**, and Dawood Kothawala, *Decoherence due to Spacetime Curvature,* arXiv (2023). https://doi.org/10.48550/arXiv.2302.09038

[3] **Kabir Khanna** and Saurya Das, *GUP Corrections to the Jaynes-Cummings Model*, arXiv (2022). https://doi.org/10.48550/arXiv.2209.10152

Research Experience

Oct 2022 - June 2023 **University of Oxford** *Oxford, UK* – **Master's Dissertation**
Supervisors - Prof. Siddharth Parameswaran and Dr. Abhishodh Prakash
Title: *Long Range Entanglement via Anomalies From Measurements*

Aug 2021 - May 2022 **IIT Madras** *Chennai, India* – **Master's Thesis** — *Grade: 10/10*
Supervisor - Prof. Dawood Kothawala
Title: *Aspects of Quantum Information in Curved Spacetimes*

Jun 2021 - Sep 2022 **University of Lethbridge** *Remote* – **Research Internship**
Supervisor - Prof. Saurya Das
Topic: Effects of quantum gravity on the Jaynes Cummings model via GUP.

Jun 2019 - Jul 2019 **Wolfram Summer School** *Waltham, Massachusetts* – **Summer Research Student**
Supervisors - Christopher Wolfram and Jonathan Gorard
Topic: Aggregation Systems
- Contribution to the Wolfram Function Repository can be found here.
- A short write-up can be found here.

Awards and Recognitions

2023 Awarded the Graduate Fellowship worth $5000 by UMass Amherst.
2022 OCSI Scholarship awarded by the Oxford Cambridge Society of India.
2021 Selected[§] for the DAAD WISE Research Scholarship.
2019 Selected to participate in a tuition-funded semester exchange at DTU, Denmark.
2019 Awarded partial funding to attend the Wolfram Summer School at Waltham, Massachusetts.
2018 Awarded the best volunteer at NSS IITM.
2017 Silver medal for obtaining a top 4000 rank in JEE Advanced 2017 out of 1.2 million students.
2015 Awarded the best outgoing student from school, DPS Secunderabad.

Teaching and Volunteering

Feb 2024 - May 2024 **Teaching Assistant for Astronomy 105 - Weather** *UMass Amherst*
Sept 2023 - Dec 2023 **Teaching Assistant for Phys 118 - Weather and Our Atmosphere** *UMass Amherst*
Jan 2022 - May 2022 **Teaching Assistant for PH3520 Quantum Physics** *IIT Madras, Chennai*
May 2018 - Jul 2018 **Mathematics and Physics Tutor** *Lamdon School, Leh*

Skills

Languages/Tools: Julia, Mathematica, Python, LaTeX, C, MATLAB
Quantum Computing/Simulation Libraries: ITensor, Pennylane, Qiskit

[§]Did not accept.