RAGHU MAHAJAN

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EDUCATION

Stanford University, Stanford, CA *June 2012 onwards*
PhD Candidate in Physics
Research focus: Techniques for strongly-interacting field theories, with a view towards holography and quantum gravity. I have also worked on transport in strongly-correlated electron systems.
Overall GPA: 4/4

University of Cambridge, Cambridge, UK *June 2012*
Part III of the Mathematical Tripos
Tyson Medal for best performance in subjects relating to astronomy

Massachusetts Institute of Technology, Cambridge, MA *February 2011*
S.B. in Physics and S.B. in Mathematics
Member of Phi Beta Kappa
Joel Matthew Orloff Award for Scholarship
Overall GPA: 5/5

Indian Institute of Technology Delhi, New Delhi, India *July 2006 to May 2008*
Matriculated in Compter Science & Engineering
Overall GPA: 10/10

DISTINCTIONS

Stanford Graduate Fellowship *2012 onwards*
Gates Cambridge Scholarship *2011*
Gold Medal at the International Physics Olympiad, Singapore *2006*
Ranked First among 300,000 students in the Joint Entrance Exam to the Indian Institutes of Technology (IIT-JEE) *2006*

TECHNICAL EXPERIENCE

Microsoft Research July 2014 - September 2014
Intern, QuArC group *Redmond, WA*

· Developed and implemented a new and more efficient algorithm to simulate real-time dynamics of quantum many-body systems following a quench.

LIGO February 2011 - August 2011
Research Assistant *Cambridge, MA*

· Set up an experiment to directly measure the reduction of quantum radiation pressure noise in an interferometer using squeezed states.

CERN June 2008 - July 2008
Summer Student *Geneva, Switzerland*

· Analyzed trigger rates for the ATLAS experiment.

SOCIAL EXPERIENCE

Aam Aadmi Party December 2014
Researcher *New Delhi, India*

· Analyzed the working of various government bodies and held policy discussions with experts, stakeholders and the public, contributing towards the manifesto for the 2015 Delhi elections.

MIT D-Lab for Design and Development January 2011
Student Leader *New Longoro, Ghana*

· Designed a cheap table-top oil press to enhance farmer's income.
· Built a composting toilet.
· Worked on other intermediate technologies like innovative water pump designs, soil blocks for cheap and sturdy construction, and peanut shellers.

MIT Office of Minority Education October 2010 - December 2010
Tutor and Mentor *Cambridge, MA*

· Taught freshman calculus to a group of three students.
· Re-ignited students' interest in mathematics.
· Obtained extremely positive feedback from the students about my teaching.

PUBLICATIONS

M. B. Hastings and R. Mahajan,"Connecting Entanglement in Time and Space: Improving the Folding Algorithm", [arXiv:1411.7950]

S. A. Hartnoll and R. Mahajan,"Holographic mutual information and distinguishability of Wilson loop and defect operators", [arXiv:1407.8191]

D. Anninos, R. Mahajan, D. Radicevic and E. Shaghoulian,"Chern-Simons-Ghost Theories and de Sitter Space", [arXiv:1405.1424]

S. A. Hartnoll, R. Mahajan, M. Punk and S. Sachdev, "Transport near the Ising-nematic quantum critical point of metals in two dimensions", Phys.Rev.B 89 (2014) 155130 [arXiv:1401.7012]

R. Mahajan, M. Barkeshli and S. A. Hartnoll, "Non-Fermi liquids and the Wiedemann-Franz law", Phys.Rev.B 88 (2013) 125107 [arXiv:1304.4249]

R. Mahajan, D. M. Ramirez, S. Kachru, and S. Raghu, "Quantum critical metals in d=3+1", Phys.Rev.B 88 (2013) 115116 [arXiv:1303.1587]

H. Asnani, R. Mahajan, V. Singh and P. Pathak, "Effective Mass Theory of a Two-Dimensional Quantum Dot in a Magnetic Field", Pramana 73 (2009) 573-580

R. Raorane, R. Mahajan, P. Pathak and V. Singh, Resonance, "The Landau Theory of Phase Transitions: A Mechanical Analog", Resonance 14 (2009)