

# Ish Dhand

## Curriculum vitae

July 22, 2014

### EDUCATION

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|------|------------------------------|---------------------------------------|
| 2016 | Ph.D., Physics and Astronomy | University of Calgary, Canada         |
| 2012 | B.Tech., Computer Science    | Indian Institute of Technology Kanpur |

### PUBLICATIONS

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- 2014 Ish Dhand, He Lu, and Barry C Sanders. Exact Quantum Interference with Two Heralded Photons . *Manuscript in preparation*
- 2014 Ish Dhand and Barry C Sanders. Stability of the Trotter-Suzuki decomposition. *Journal of Physics A: Mathematical and Theoretical*, 47(26):265206, July 2014

### TALKS AND CONFERENCE PARTICIPATION

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- 2014 Ish Dhand and Joydip Ghosh, Quantum Simulation and Implementations (invited), Alberta Quantum-Nano Workshop, Red Deer, Alberta, Canada. 14 July 2014.
- 2013 Ish Dhand and Barry C. Sanders, Finite precision in Trotter-Suzuki decomposition (contributed), Canadian Quantum Information Students' conference, Calgary. 24 Jun 2013 - 29 Jun 2013.
- 2013 Ish Dhand and Barry C. Sanders, Finite precision in Trotter-Suzuki decomposition (Invited), Institute for Quantum Computing, University of Waterloo, Waterloo, Ontario. 6 Jun 2013
- 2013 Ish Dhand and Barry C. Sanders, Finite precision in Trotter-Suzuki decomposition (contributed), CAP Congress 2013, Montreal. 27 May 2013 - 31 May 2013.

### AWARDS AND ACHIEVEMENTS

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- 2104 Awarded \$3600 Departmental Graduate Student Excellence Award by Department of Physics and Astronomy, University of Calgary.
- 2013 Awarded \$3600 Queen Elizabeth II Fellowship, 2013 by University of Calgary.
- 2012 Awarded \$7200 Departmental Fellowship, 2012-2013 by the department of Physics and Astronomy, University of Calgary.
- 2009 Awarded \$6000 Aditya Birla Group Scholarship. Ten out of 10,000 incoming students to the Indian Institutes of Technology are selected for this award.
- 2008 Won the Indian Physics Association prize for the Best Solution to a Challenging Theoretical Problem.
- 2008 Stood 22<sup>nd</sup> all over India in the Joint Entrance Examination out of the 600,000 candidates who appeared.
- 2008 Awarded Gold Medal in Indian National Physics Olympiad.
- 2007 Represented India at the 8<sup>th</sup> Asian Physics Olympiad at Shanghai.
- 2006 Awarded the National Child Award by the Prime Minister of India. Given to 35 students all over India with outstanding caliber in academics.

- 2004    Awarded National Bal Shree by President of India for creative scientific innovation.

#### RESEARCH EXPERIENCE

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- 2014    **Quantum Simulation Algorithms for Rutherford Scattering**  
with Dr. Barry Sanders, University of Calgary, Calgary
- 2014    **Multi-photon interferometry using Wigner D-functions**  
with Dr. Hubert de Guise, Lakehead University, Thunder Bay
- 2014    **Implementations of  $SU(n)$  Quantum Transformation using Slits**  
with Dr. Urbasi Sinha, Raman Research Institute, Bangalore
- 2013    **Exact quantum interference with two heralded photons**  
with Dr. Yu-ao Chen, University of Science and Technology China, Shanghai
- 2013    **The Stability of the Trotter-Suzuki Decomposition**  
with Dr. Barry Sanders, University of Calgary, Calgary
- 2012    **Classical simulation of noninteracting-fermion quantum circuits**  
with Dr. V. Ravishankar, Department of Physics and Dr. P. Kurur, Department of Computer Science, IIT Kanpur, Kanpur
- 2011    **Classical algorithms for simulation open quantum systems using matrix product states**  
with Dr. Andreas Läuchli, Max Planck Institute for Physics of Complex Systems, Dresden.

#### TEACHING EXPERIENCE

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- 2013    TA, Senior Physics Laboratory
- 2012    TA, Freshman Mechanics

#### SERVICE AND PROFESSIONAL SKILLS

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- 2013    Organizer of CQISC, Canadian Quantum Information Students' conference to be held in June 2013 at Calgary.
- 2012    Organizer of PHAS-Lunches, fortnightly lunch-talks in the Physics department at University of Calgary.
- 2011    Editor of the Science and Technology magazine of IIT Kanpur
- 2010    Organizer and chair of ICARUS-2010, undergraduate research conference organized at IIT Kanpur.

#### ADDRESS

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