Praveen Deorani

Research Assistant
Electrical and Computer Engineering
National University of Singapore

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KEY QUALIFICATIONS

- Strong programming skills and analytic capability
- Expertise in statistical and mathematical modeling
- Skilled in machine learning and data mining

COMPUTER SKILLS

- Programming languages: Python, R, Java, Ruby, Common Lisp, C/C++
- Software tools: Matlab, Octave, Origin, LabVIEW, AutoCAD, MS Office
- Expertise in Unix based systems and shell programming

EDUCATION

- PhD in Electrical and Computer Engineering GPA: 4.58/5
  National University of Singapore (Jan 2015)
  Title: "Magnetization dynamics in spin orbit coupled systems"
- M.Sc. (Integrated) in Physics (July 2010) GPA: 7.3/10
  Indian Institute of Technology, Kanpur
- Independent (coursework completed in MOOC)
  1 – Learning from data, EDX (Caltech.)
  2 – Statistical inference, Coursera (John Hopkins University)
  3 – Machine learning, Coursera (Stanford University)
  4 – R programming, Coursera (John Hopkins University)

WORK EXPERIENCE

- Research Scholar **Jan 2011 – present**
  Spin and Energy Laboratory, National University of Singapore
  - Developed simulations and computational methods for various research projects
  - Designed and conducted nanofabrication experiments for spintronic devices
  - Mentored junior students and taught undergraduate modules
- Research Assistant **Aug 2009 – Oct 2010**
  Low Temperature Physics Laboratory, Indian Institute of Technology, Kanpur
  - Developed Internet based labs
  - Researched spin injection into metals
- Summer Internship **June 2008 – July 2008**
  Laboratory of Photonics and Interfaces, Ecole Polytechnique de Lausanne, Switzerland
  - Researched electro-catalytic activity of a Ruthenium complex in a PEFC electrode

EXPERIMENTAL SKILLS

- Nanofabrication skills: photolithography, Ion-milling, Deposition
- Electrical transport measurements

OTHER SCHOLASTIC ACHIEVEMENTS

- Selected for 6 presentations in international conferences from 2012 – 2014 (oral and poster)
- Recipient of NUS research scholarship (2011-2014)
- Recipient of CBSE Merit scholarship (2005-2010)
- Secured all India rank 506 in IIT JEE 2005 (top 0.1 %)

EXTRA CURRICULARS AND RESPONSIBILITIES

- Member of the badminton team of National University of Singapore (NUS)
- Member of the badminton team of Indian Institute of Technology Kanpur and captain during the period of Mar 08 – Mar 09
- Festival coordinator of 'Josh' 09, the annual IIT Kanpur sports festival
- General Secretary of Games and Sports Council, IIT Kanpur (Oct 08 - Dec 08)

PUBLICATIONS

- **Praveen Deorani**, Hyunsoo Yang, "Role of spin mixing conductance in spin pumping: Enhancement of spin pumping efficiency in Ta/Cu/Py structures", Applied Physics Letters, 2013
- **Praveen Deorani**, JH Kwon, Hyunsoo Yang, "Nonreciprocity engineering in magnetostatic spin waves", Current Applied Physics, 2014
- **Praveen Deorani**, Jaesung Son, Karan Banerjee, Nikesh Koirala, Matthew Brahlek, Seongshik Oh, Hyunsoo Yang, "Observation of inverse spin Hall effect in bismuth selenide", Physical Review B, 2014
- SS Mukherjee, **Praveen Deorani**, JH Kwon, Hyunsoo Yang, "Attenuation characteristics of spin-pumping signal due to traveling spin waves", Physical Review B, 2012
- JH Kwon, SS Mukherjee, **Praveen Deorani**, M Hayashi, and Hyunsoo Yang, "Characterization of magnetostatic surface spin waves in magnetic thin films: evaluation for microelectronic applications", Applied Physics A, 2013
- Xuepeng Qiu, Kulothungasagaran Narayanapillai, Yang Wu, **Praveen Deorani**, Xinmao Yin, Andrivo Rusydi, Kyung-Jin Lee, Hyun-Woo Lee, Hyunsoo Yang, "Spin-orbit torque engineering via oxygen manipulation", Nature nanotechnology, 2015
- Xuepeng Qiu, **Praveen Deorani**, Kulothungasagaran Narayanapillai, Ki-Seung Lee, Kyung-Jin Lee, Hyun-Woo Lee, and Hyunsoo Yang , "Angular and temperature dependence of current induced spin-orbit effective fields in Ta/CoFeB/MgO nanowires", Scientific Reports, 2014
- Li Ming Loong, Jae Hyun Kwon, **Praveen Deorani**, Chris Nga Tung Yu, Atsufumi Hirohata, and Hyunsoo Yang, "Investigation of the temperature-dependence of ferromagnetic resonance and spin waves in $Co_2FeAl_{0.5}Si_{0.5}$", Applied Physics Letters, 2014
- Yi Wang, **Praveen Deorani**, Xuepeng Qiu, JH Kwon, and Hyunsoo Yang, "Determination of intrinsic spin Hall angle in Pt", Applied Physics Letters, 2014
- Li Ming Loong, Xuepeng Qiu, Zhi Peng Neo, **Praveen Deorani**, Yang Wu, Charanjit S. Bhatia, Mark Saeys, and Hyunsoo Yang, "Strain-enhanced tunneling magnetoresistance in MgO magnetic tunnel junctions", Scientific Reports, 2014