Sourav Chatterjee

Curriculum Vitae

Max-Planck-Institute for the Science of Light
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Interests

Quantum Information, Quantum Optics, Quantum Communication, Quantum Cryptography.

Education

2014 **B.Tech in Computer Science and M.S in Computational Natural Science,** *International Institute of Information Technology, Hyderabad* (IIIT-H): *CGPA – 8.14*

2010 **B.Sc in Physics (Honours),** *Vidyasagar College, Calcutta University, Aggregate – 53.87%*
In Experimental Physics papers, Aggregate – 74.4%

2007 **Indian School Certificate,** *Salt Lake School, Aggregate – 82.25%*

2005 **Indian Council for Secondary Education,** *St. Joan's School, Aggregate – 87.6%*

Doctoral Thesis (In Progress)

`Title:` **Experimental Investigation of Quantum Information Protocols**
`Supervisor:` Prof. Dr. Gerd Leuchs
`Group Leader:` Dr. Christoph Marquardt (QIV)
`Affiliation:` Max-Planck-Institute for the Science of Light, Erlangen, Germany

Masters Thesis

`Title:` **Broadcasting of Correlations & Secret Sharing in a Quantum World**
`Supervisors:` Dr. Indranil Chakrabarty & Prof. Harjinder Singh
`Affiliation:` International Institute of Information Technology, Hyderabad (IIIT-H), India

Publications

`-In Quantum Information and Quantum Cryptography`

April 2016 **Broadcasting of quantum correlations: Possibilities and impossibilities**
Sourav Chatterjee, Sk. Sazim, Indranil Chakrabarty
Phys. Rev. A 93 (4), 042309

Nov. 2015 **State Dependent and Independent cloner: Cloning and Broadcasting**
Manish Kumar Shukla, Indranil Chakrabarty, Sourav Chatterjee
arXiv:1511.05796

Nov. 2014 **Quantum Residual Correlation: Interpreting through State Merging**
Indranil Chakrabarty, Abhishek Deshpande, Sourav Chatterjee
arXiv:1410.7067

Feb. 2014	**Sequential Quantum Secret Sharing in a Noisy Environment aided with Weak Measurements**
	Maharshi Ray, Sourav Chatterjee, Indranil Chakrabarty
	arXiv:1402.2383
	`Note:  Accepted in` *European Physical Journal D*`.`
Aug. 2013	**Broadcasting of correlation and its use in quantum information processing**
	Sourav Chatterjee, Anubhav Chaturvedi, Maharshi Ray, Indranil Chakrabarty
	In Proceedings of the 13th Asian Quantum Information Science Conference (AQIS 2013), Institute of Mathematical Sciences (IMSc), Chennai, India

`-In Other Areas`

Dec. 2013	**Automated Restructuring of Contents for Virtual Labs**
	Sourav Chatterjee, Pranitha Reddy, Venkatesh Choppella
	In Proceedings of the 5th IEEE International Conference on Technology for Education (IEEE-T4E 2013), Indian Institute of Technology (IIT), Kharagpur, India
Dec. 2012	**Now and next-generation sequencing techniques: future of sequence analysis using cloud computing**
	Radhe Shyam Thakur, Rajib Bandopadhyay, Bratati Chaudhary, Sourav Chatterjee
	Frontiers in Genetics, 3, 280: 1-8

Talks/Oral Presentations

Dec. 2015	"Let There Be Light" On Optical Applications, Synergies & Vistas, Celebrating International Year of Light (IYL-2015), Vidyasagar College, Calcutta University, Kolkata, India. (Invited Talk as a Resource Person)
Nov. 2015	1st International Conference for Young Quantum Information Scientist (YQIS), Institut d'Optique Graduate School, Palaiseau, France. (Accepted for Oral presentation)
Jun. 2015	QNLO summer school, Technical University of Denmark, Lyngby, Denmark.
May. 2015	Invited Talk at Technology Campus, University of Calcutta, Kolkata, India.

Conference Posters

`-In Quantum Information and Quantum Cryptography`

Feb. 2016	**Quantum Receivers for Coherent Communication**
	Sourav Chatterjee, Christian R. Mueller, Gerd Leuchs, Christoph Marquardt
	Deutsche Physikalische Gesellschaft (DPG)- Spring Meetings, Leibniz University of Hannover, Hannover, Germany.
	○ `Conference Link:` http://hannover16.dpg-tagungen.de/
Feb. 2014	**Sequential Quantum Secret Sharing in a Noisy Environment aided with Weak Measurements**
	Maharshi Ray, Sourav Chatterjee, Indranil Chakrabarty
	International Program on Quantum Information (IPQI 2014), Institute of Physics (IOP), Bhubaneswar, India
	○ `Conference Link:` http://www.iopb.res.in/ ipqi2014/
July 2013	**Sequential Quantum Secret Sharing and a 'Quantum Bank'**
	Maharshi Ray, Sourav Chatterjee, Indranil Chakrabarty, Kannan Srinathan
	3rd International Conference on Quantum Cryptography (QCRYPT 2013), Institute of Quantum Computing (IQC), Waterloo, Canada

    ○ Conference Link: http://2013.qcrypt.net

Jan. 2013 **Correlating Capabilities of Non-Local Hamiltonian**

<u>Sourav Chatterjee</u>, S.K.Sazim, Indranil Chakrabarty, Harjinder Singh

International Conference on Quantum Information and Quantum Computing (ICQIQC 2013), Indian Institute of Science (IISc), Bangalore, India

    ○ Conference Link: http://cts.iisc.ernet.in/CQIQC/ICQIQC/

    -In Other Areas

March 2013 **Monte Carlo (MC)-based Algorithm to Study FRET in Gold-DNA Conjugates**

Maharshi Ray, <u>Sourav Chatterjee</u>, Sandhya Rai, Harjinder Singh

Current Trends in Computational Natural Sciences (CTCNS), International Institute of Information Technology (IIIT-H), Hyderabad, India

    ○ Conference Link: http://www.iiit.ac.in/ccnsb/ctcns/Home.html

Workshops Attended

June 2015 **Summer School on Quantum and Non-Linear Optics (QNLO)**, Venue: Technical University of Denmark (DTU), Lyngby, Denmark

Sep. 2013 **International Workshop on Optical Quantum Information**, Satellite program to AQIS 2013, Venue: Jaypee Institute of Information Technology (JIIT), Noida, India

Jan. 2013 **Mini Winter School on Quantum Information and Computation**, Satellite program to ICQIQC 2013, Venue: Indian Institute of Science (IISc), Bangalore, India

Achievements and Awards

○ Won the Learn Swift $100 Playground Challenge in 2014 at TopCoder Community.

○ Featured in the Dean's Research awards for the academic year 2013-2014.

○ Featured in the Dean's Academic Merit List awards for the Monsoon 2012 (SGPA-9.75) and Spring 2013 (SGPA-9.54) semesters.

○ Featured in the Dean's Research awards for the academic year 2012-2013.

○ Cleared till the final round at the Facebook Hacker Cup-2011.

Computer Proficiency

Programming Languages

Intermediate: C++, Java, Matlab, Octave, Objective-C   **Advanced:** Python, C, Bash scripting, Mathematica, Swift (iOS Dev.)

Web Technologies and Databases

Basic: Drupal framework, Version Control (SVN, GIT-HUB), CSS   **Intermediate:** HTML5, PHP, JavaScript, MySQL, web2py

Operating Systems

Intermediate: Microsoft Windows   **Advanced:** Linux, Mac OS X

Editors & IDEs

Intermediate: Emacs   **Advanced:** LaTeX, OpenOffice, MS Office, Vim, XCODE

Work Experience

Software Engineer at Xenovus, Inc.

Apr. 2014–15 iOS Application Development

Course Content Development (RA)

Spring & Summer 2014	Solid State Electronic Devices (A Online SSED course); Course Instructors: Dr. Shubhajit Roy Chowdhury
Organization	Enhanced Edu.

Teaching Assistantship (TA)

Friedrich-Alexander-Universitaet Erlangen-Nuremberg (FAU):

Fall 2015	Experimental Physics-3; Course Instructor: Prof. Dr. Gerd Leuchs & Dr. Christoph Marquardt.

International Institute of Information Technology, Hyderabad (IIIT-H):

Spring 2012, 2013 & 2014	Science Lab-II (An advanced experimental Physics course); Course Instructors: Dr. Tapan Kumar Sau and Dr. Prabhakar Bhimalapuram.
Fall 2013	Mathematics-I (A course on Discrete Mathematics); Course Instructor: Dr. Indranil Chakrabarty.
Fall 2012	Optics, Symmetry and Spectroscopy (An advanced theoretical Physics course); Course Instructor: Prof. Harjinder Singh.

Research Assistantship (RA)

In **Virtual Labs** which are an initiative of **Ministry of Human Resource Development (MHRD)**, India under the National Mission on Education through ICT.

2012–2014	Virtual Labs Engineering and Architecture Division (VLEAD) with Dr. Venkatesh Choppella
	Contributions:Design of porting schemes and lab-framework; System maintenance
	https://vlead.virtual-labs.ac.in/
2013	Physical Sciences Lab with Dr. Prabhakar Bhimalapuram
	Contributions:Content organization; Framework construction; Back-end support
	http://deploy.virtual-labs.ac.in/labs/phy14/
2011–2012	Head of the design team of three labs on molecular spectroscopy and colloidal sciences with Dr. Tapan Kumar Sau
	Contributions:Content development and organization; Framework construction; Back-end support
	http://deploy.virtual-labs.ac.in/labs/ccnsb01/index.html
	Note: For other labs, substitute ccnsb01 with ccnsb02 or ccnsb03 in the url

Summer Employment

2013	**Project**: LPG subsidy in India; **Employer**: Prabhat Barnwal, Columbia University, USA.
	Contributions:Data extraction, analysis of micro data, Parallelization

Extra-curricular activities

Administrative Skills

2015–Present	Member of hbarOmega OSA Student Chapter Erlangen.
2011–2014	Senior Member of Student Academic Council (SAC) at IIIT-H.
	http://sac.iiit.ac.in/

Sports

- Participated at all the inter and intra-college Badminton competitions.
- Participated in the under-19 cricket tournament organized by Cricket Association of Bengal.

Declaration

I hereby declare that the above information is true to the best of my knowledge.