

Soumadeep Saha

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Education

2015–Present	<p>5th year of Integrated BS-MS from Indian Institute of Science Education and Research, Kolkata</p> <p>I am a Physics Major currently doing my Master's dissertation on Machine learning theory. Additionally, my interests lie in Theoretical and Mathematical Physics. I have taken a wide array of courses in foundational and advanced Physics and Mathematics like Quantum Mechanics (Introductory, Intermediate, Advanced), Electrodynamics (Introductory, Intermediate), Statistical Mechanics (Introductory, Intermediate, Advanced), Classical Mechanics (Introductory, Intermediate), Quantum Field Theory, Linear Algebra, Analysis (Real and Complex), Differential Geometry, Group Theory, Galois Theory, etc to name a few.</p> <p>GPA : 7.5/10; GRE : 330/340 (170 Q, 160 V)</p>
2013–2015	<p>High School Bhavan's G.K. Vidyamandir, Kolkata</p> <p>I developed a penchant for science during this period. I also trained for olympiads and competitive programming and was selected for INOI. I was also selected in the prestigious national level merit test N.T.S.E. and was awarded the K.V.P.Y. Fellowship. I passed my senior secondary examinations with a 92% aggregate score.</p>

Skills

Programming	I am adept at C++ , Python and Fortran .
Algorithms	I have an exhaustive knowledge of fundamentals of data structures and algorithms , gathered from my competitive programming background and my curriculum.
Computers	I am decent at web development (CSS, HTML, PHP), \LaTeX , graphical programmes (Photoshop, etc), and various plotting software. I am also familiar with the Arduino and similar microcontrollers.

Experience

Summer 2018, 2019	Worked on <i>Pure $SU(3)$ Lattice Gauge Simulations</i> under the supervision of Dr. Pushan Majumdar, IACS Kolkata. I worked on parallelising Fortran code for lattice gauge simulations using OpenMP. I also learnt much of the theoretical background necessary, including the path integral approach to quantum field theory, regularisation, re normalisation, etc.
Summer 2017	Attended a summer school on <i>Quantum Information and Computation</i> under the tutelage of Dr. Guruprasad Kar, ISI Kolkata We covered a lot of the key areas of Quantum Computation , including several algorithms for Cryptography, Searching, etc and also discussed germane theoretical aspects like entanglement and its properties, information entropy, etc.
Summer 2016	Worked on <i>Properties of Oscillations in Isotropic Fields</i> under the supervision of Dr. Ananda Dasgupta, IISER Kolkata We looked at the age old toy problem of a particle moving in a tunnel through the earth, with added complications like non-uniform densities, non-diametrical path, etc and discovered some striking features that still remain unexplained.

Hobbies and Interests

- **Robotics** - I have an active interest in robotics, be it writing image processing or SLAM algorithms or designing a robot that can climb stairs. I have also conducted introductory workshops on robotics and was the Secretary of the Robotics and Astronomy club.
 - **Sports** - I have played in 1st division Men's Basketball league. I have also represented my college in Basketball, Volleyball and Athletics events at a national stage.
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