Sutirtha Paul

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EDUCATION

University of Tennessee Knoxville, Tennessee
Graduate Student 2023 -

Ramakrishna Mission Vivekananda Education and Research Institute Belur, West Bengal, India
M.Sc. in Physics, CGPA: 9.38/10.00 2021–2023
Elective Papers: Advanced Condensed Matter Physics,
Advanced Quantum Field Theory (audit)

Asutosh College, University of Calcutta Kolkata, West Bengal, India
B.Sc. (Honours) in Physics, CGPA: 8.060/10.00 2018–2021
Elective Papers: Advanced Statistical Mechanics, Advanced Classical Dynamics,
Nuclear and Particle physics, Laser and Fibre optics

Apeejay School, Salt Lake Kolkata, West Bengal, India
XII, Central Board of Secondary Education (CBSE), Percentage: 91.8 2018
X, Central Board of Secondary Education (CBSE), CGPA: 10.0/10.0 2016

RESEARCH EXPERIENCE

Master's thesis: Transport through quantum dot(s) 2022-2023
Supervisor: Dr. S. Tarat, Professor, Dept. of Physics, RKMVERI

− Studying the various approaches used to calculate current through a quantum dot or dots

Monte-Carlo simulation of 2D Ising model 2021
Final project for Phy 415: Computer Fundamentals and Computational Physics
Course Instructor: Dr. Sanjoy Biswas, Professor, Dept. of Physics, RKMVERI

− Implemented the metropolis algorithm to simulate the Ising model on a 2D lattice.Report: Here
− Used it to study the properties of spin systems under an external magnetic field, replicating some results of
  10.1103/PhysRevB.42.856

Computational Investigation of the Allen-Cahn and Cahn-Hilliard equation 2020-21
Supervisor: Dr. A.K. Bhattacharjee, Professor, Dept. of Physics, Asutosh College, University of Calcutta

− Developed code solving the nonlinear Allen-Cahn and Cahn-Hilliard equations using spectral methods
− Demonstrated increased accuracy using small lattice sizes. Report: Here Codes: Link to github repository

CONFERENCES/SEMINARS ATTENDED

- Workshop on *"Ergodicity and it's breaking: A view from Many Body, QFT and Holography"*, 16-18 March, 2023, RKMVERI
- *Lectures on Conformal Field Theory in D>2 dimensions* by Dr. Ritam Sinha, RKMVERI

Scholarships and Awards

- Awarded UGC-JRF & LS in Joint CSIR-UGC JRF (NET) & LS   June, 2023
- Qualified Graduate Aptitiude Test in Engineering (GATE) in Physics   February, 2023
- 1st prize in Quiz at the Delight Physics Lab, Kolkata, India   2020
- Times Spark Scholarship   2018
  Awarded by Times of India

- 1st prize in Model Presentation (Senior level), Science Fair organised by Institute of Engineering and Management 2017
- Jit Paul Award   2017
  Awarded to a student of class XI who has demonstrated over the last three years in his action, behaviour and work, human values enshrined in the Indian cultural tradition.

Extracurricular Activities

- Built an auto-levelling quadcopter using an Arduino Uno as a flight controller after taking the master's course Design and Fabrication laboratory.
- Edited the November 2022 issue of the Physics departmental magazine 'Unmesh'
- Speaker in a group presentation contest at the Delight Physics Lab, Kolkata, India and gave a presentation titled "Arrow of Time" based on unidirectional flow of time in February 2020
- Received invitation for undergraduate associateship in Physical Sciences at the Saha Institute for Nuclear physics, 2019 (*Could not attend due to conflicting exam schedule at my university*)
- Received invitation for National Initiative of Undergraduate Sciences (NIUS) camp, 2019 at Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, Mumbai (*Could not attend due to conflicting exam schedule at my university*)
- Participated in Central Board of State Education (CBSE), State Level Science Exhibition in 2014 and 2015
- Captain of my high school chess team

Skills

- **Computational skills:** Python (Scipy, Numpy, Matplotlib), Fortran95, C++, Latex, Gnuplot, Origin

Languages

- Fluent in English, Bengali and Hindi