Sriram Chelakkara Lakshmanan

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Research interests

Condensed matter theory: I am interested in studying closed quantum systems with disorder. I am specifically curious about the phenomenon of Many-Body Localization (MBL) and closed systems with long range interactions.

Statistical physics: I like non-equilibrium statistical phenomenon such as exclusion processes, random walks and percolation theory.

Education

2024 – Present **University of Connecticut** – Connecticut, USA
Graduate Student, Department of Physics; *GPA: 3.65/4.00*.
Major Advisor: Prof. Lea Ferreira dos Santos, Department of Physics, University of Connecticut.

2018 – 2023 **Cochin University of Science and Technology** – Kochi, India.
Integrated MSc Physics; *GPA: 9.04/10.0*.

Research experience

August 2023 – Present **Junior Research Fellow, Tata Institute of Fundamental Research, Mumbai.**
Transport properties of disordered spin systems: Study of 1D spin chains with disorder to probe artefacts of Many Body Localization (MBL).
Principal Investigator: Prof. Shamik Gupta, TIFR, Mumbai.

January 2023 – May 2023 **Master's Thesis, Tata Institute of Fundamental Research, Mumbai.**
A study of asymmetric and symmetric simple exclusion processes in the presence of stochastic resetting: Analytic and numerical results for the stationary state distribution of the ASEP and SSEP in the presence of stochastic resetting.
Thesis Advisor: Prof. Shamik Gupta, TIFR, Mumbai.

June 2022 **Summer Project, Institute of Mathematical Sciences, Chennai.**
Analysis of immune cell population in neonatal and adult blood: Study of the cross-correlation structure of immune cell population and an attempt to model it using an M-Factor Model.
Project Advisor: Prof. Sitabhra Sinha, IMSc, Chennai.

January 2021 - May 2021 **Semester Mini-Project, Cochin University of Science and Technology, Kochi.**
An attempt to study two-dimensional continuum percolation as a one-dimensional time dependent model: A study of the two dimensional boolean model and an effort to view it as a discretized model in the hope of simplifying simulation and better understanding critical phenomenon.
Project Advisor: Dr. V Sasidevan, Department of Physics, CUSAT, Kochi.

Teaching experience

Fall 2024, Spring 2025 **Teaching assistant, PHYS 1502Q: Physics for Engineers II (University of Connecticut) (TA for two sections).**
Introduction to principles of electromagnetism. As one of the 3 TAs for a section, my responsibilities were to help explain and demonstrate physical principles during lectures using demos, teach tutorials and hold regular office hours for doubt clearance. Duties also included handling weekly lab activities that were based on the lecture material and grading of tutorials, labs, pre-labs and examinations.
Average student feedback: Very positive.

Technical skills

Programming languages and typesetting
Proficient in: C++, Python
Familiar with: R, GNU Octave, Matlab
Proficient in: LaTeX

Operating systems and related
Proficient in Linux and Windows based operating systems and at using cluster and high performance/throughput computing resources.

Languages
English, Hindi, Malayalam, Tamil.