Parth Bhargava

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EDUCATION

National University of Singapore *Aug 2024 – May 2028*

Bachelor of Science in Physics (Honors, Distinction) **GPA: 4.43**

PROJECTS

Quantum Wavepacket Visualization *Jan 2025 – Mar 2025*

Developed interactive visualizations of quantum phenomena in Python

- 3D simulation of a quantum wavepacket traversing a potential barrier
- Quantum harmonic oscillator dynamics

COURSEWORK

Classical Mechanics:	Lagrangian and Hamiltonian formulations, coupled ODEs, variational principles
Electromagnetism:	Maxwell's equations, boundary-value problems, vector calculus
Quantum Mechanics:	Schrödinger equation, operator methods, eigenvalue problems
Mathematical Methods:	Linear algebra, ODEs/PDEs, Fourier analysis, complex analysis
Programming:	Python/Java, algorithmic problem-solving, debugging
Experimental Physics:	Experimental design, statistical data analysis, uncertainty estimation

SKILLS

Programming Languages:	Python, C++, C, SQL, Julia
Frameworks, Libraries & Tools:	Matplotlib, Git, PyTorch, LaTeX, Typst

ACHIEVEMENTS

- **BITSAT: 321/390**, strong proficiency in Physics, Chemistry, and Mathematics
- **JEE Mains: 99.14 percentile** (Top 1% of 2 million candidates)
- **JEE Advanced Rank: 9112**, exceptional problem-solving abilities
- Awarded **Silver Medal** in International Aerospace Olympiad 2024
- **IISER Aptitude Test Rank: 357**

INTERESTS

- **Computational Physics and Machine Learning:** Physics-informed neural networks, scientific computing, and data-driven approaches to modeling complex physical systems
- **Experimental and Theoretical Integration:** Laboratory techniques in condensed matter physics, instrumentation development, and bridging experimental data with computational models