

Curriculum Vitae

Kishal Tandel

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Education

- August, 2023 – present **BS-MS in Physical Sciences**, Indian Institute of Science Education and Research, Kolkata, India
CGPA : 8.17/10 (after 4th Semester)
- 2023 **ISC**, METAS M.C.D. School of S.D.A. , Surat, Gujarat, India
Class 12 - 93.25%, Indian School Certificate (ISC)
- 2021 **ICSE**, METAS M.C.D. School of S.D.A. , Surat, Gujarat, India
Class 10 - 95.40%, Indian Certificate of Secondary Examination (ICSE)

Research Interests

Quantum optics - including light-matter interactions, quantum measurement theory, and foundational aspects of quantum mechanics.

Quantum gravity - especially the interplay between quantum information, spacetime geometry, and fundamental physics.

More broadly, I am interested in analytical and computational methods in theoretical physics, with a focus on applying mathematical modeling to complex dynamical systems across scales.

Papers

- April 14, 2025 **One-Dimensional Quantum Tunneling**
Solved one-dimensional time independent Schrödinger equation for all energy regimes, derived the transmission and reflection coefficients and proved their continuity explicitly at $E = V_0$, plotted the coefficients using Python and compared the results with classical mechanics qualitatively.

Projects

- May, 2025 **Chaotic Trio**
Implemented the classical fourth-order Runge-Kutta algorithm in C++ to numerically solve Newton's equations for a planar three-body gravitational system and visualized chaotic orbital trajectories under varying initial conditions using custom plotting scripts.

April, 2025 **Quantum Snake**

Developed a Python-based Quantum Snake model inspired by my work on one-dimensional tunneling, featuring a classic snake, constant potential barriers and a quantum food particle constrained to move in one dimension at a time.

Skills

Programming Python, C, C++, Java, \LaTeX , Typst, HTML, CSS, JavaScript

Language English, Hindi, Gujarati