

Krishna Tiwari

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OBJECTIVE

As a second-year undergraduate student at IISER Kolkata, I am passionate about exploring the frontiers of biology through interdisciplinary approaches. With growing interest in microbiology and protein biology, I am keen to develop research skills in both experimental and computational biology. I aim to contribute meaningfully to scientific understanding while cultivating a strong academic and practical foundation in the life sciences.

EDUCATION

- **IISER Kolkata**, BS-MS Dual Degree — 2023 - Present
SGPA: 1st Semester – 7.15, 2nd Semester – 7.09
- **Ashok Memorial Public School**, Senior Secondary (CBSE) — 2022 - 2023
Percentage: 93.2%
- **Ashok Memorial Public School**, Secondary (CBSE) — 2020 - 2021
Percentage: 93%

LAB EXPERIENCE

- Completed Biology and Chemistry laboratory courses for 4 semesters at IISER Kolkata.

PROJECTS

Phylogenetic Inference Using Machine Learning on BRCA2 Gene:

IISER Kolkata — Mentor: Prof. Anindita Bhadra — March 2025 – Apr 2025

- Developed a machine learning pipeline to infer phylogenetic relationships from BRCA2 gene data.
- Integrated concepts from evolutionary biology and computational modeling to analyze genetic sequences.
- Secured 19.75/20 (highest score in class); selected as top project group.
- Collaborated with a team of 4 to design, implement, and present findings

Comparative Analysis Of Codon Bias Across Five Species:

IISER Kolkata — Independent Study — 17th April, 2025 – 26th April, 2025

- Used Python (Biopython, Pandas, Scikit-learn) for data processing, RSCU calculation, and statistical analysis.
- Applied PCA, KMeans clustering and Hierarchical Pairwise Clustering to identify patterns and evolutionary relationships.
- Created visualizations (heatmaps, dendrograms, correlation plots) to communicate findings.
- Successfully analysed the data across five species.

SKILLS

Lab Techniques: UV-Vis, IR, Column Chromatography, Paper Chromatography, Titration, Crystallization

Programming: Python, R, LaTeX, Microsoft Office, Gnuplot, NumPy, Matplotlib, SciPy, Scikit-learn, PyTorch, Seaborn, Biopython

RELEVANT COURSES COMPLETED

Biology:

Molecular Genetics, Evolutionary Biology, Biophysics, Enzymology, Protein Structure and Folding, Genetic Diseases, Biochemistry Lab

Chemistry:

Reaction Mechanism in Organic Chemistry, Spectroscopy, Inorganic Chemistry I & II, Stereochemistry, General Physical Chemistry, Quantum Chemistry I, Physical Organic Chemistry

EXTRACURRICULARS

- Secretary of the Trekking Club, IISER Kolkata (2024–Present)
- Treasurer of Volleyball Club, IISER Kolkata (2025–Present)

WORKSHOPS AND EVENTS

- **IISER Kolkata, Institute Open Day** — Volunteer (Feb 28, 2024 & 2025)
- **IIIT Kalyani & GIAN** — Workshop on Entrepreneurship and Innovation (Mar 21, 2024)
- **IISER Kolkata** — Nano Jatha Lecture Series (Jul 5, 2024)
- **Gangeya Student Chapter of East India** — ALEX: Learning Bridges Algorithm and Experiments in Biophysics (Mar 18, 2025)