

# Rohan Ghosh Dastidar

☎ +91 9123020755 | ✉ rgdastidar2069@kgpian.iitkgp.ac.in | 🔗 LinkedIn | 🐙 GitHub | 🌐 Portfolio | 📍 Kharagpur, India

## EDUCATION

2022 – 2027	<b>Indian Institute of Technology Kharagpur</b> B.Tech/M.Tech (Dual Degree) in Chemical Engineering <i>Minor: Biotechnology &amp; Biochemical Engineering</i> <i>Micro Spl: High-Performance Computing and Applications</i> <i>Micro Spl: Micro Fluidics and Nano Patterning</i>	<b>GPA: 8.78</b>
2021	<b>Indira Gandhi Memorial High School</b> (CBSE Class 12)	<b>86.6%</b>
2019	<b>Pramila Memorial Institute</b> (ICSE Class 10)	<b>97.6%</b>

## RESEARCH EXPERIENCE

**Computational Structural Biology Lab, IIT Kharagpur** Jan 2026 – Present

*Bachelor's Thesis Project II — Prof. Ranjit Prasad Bahadur*

- Developing a machine learning based model for the prediction of SLiMs (short linear motifs) and MoRFs (molecular recognition features) in RNA binding proteins.

**Structural Protein Biology & Engg Lab, Iowa State University, USA (Remote)** July 2025 – Present

*Remote Research Intern — Prof. Ratul Chowdhury*

- Integrating PLM's with SMILES-based language models to map proteins and ligands into a unified context-aware space to predict protein-ligand binding affinity and discover key interacting residues and atoms in such complexes
- Performed analysis on performance, memory consumption and runtime on different PLM's running Seq2Bind – a protein language transformer based protein-protein binding affinity predictor
- Conducted extensive literature review and developed a corpus of publicly available machine learning models for protein-protein binding affinity

**Computational Structural Biology Lab, IIT Kharagpur** July 2025 – Dec 2025

*Bachelor's Thesis Project I — Prof. Ranjit Prasad Bahadur*

- Developed a bioinformatics pipeline to predict intrinsic disorder in proteins from gene sequences using machine learning.
- Performed genomic analysis of specific organisms from the three domains – bacteria, archaea, eukarya to assess the nature of disordered regions

**Cancer Systems Biology Lab, IISc Bengaluru, India** May 2025 – July 2025

*Summer Research Intern — Prof. Mohit Kumar Jolly*

- Investigated the role of Transcriptional Noise in Epithelial-Mesenchymal Heterogeneity to study phenotypic switching.
- Simulated gene regulatory networks using **Stochastic Differential Equations** and high-throughput parameter scans.
- Implemented a "partitioned leaping" algorithm to optimize space and time complexity of stochastic simulations.

**Biomolecular Nanotechnology Lab, CIC biomaGUNE, Spain (Remote)** May 2024 – Aug 2024

*Foreign Training Program — Prof. Aitziber Lopez Cortajarena*

- Designed CTPR4 protein variants with electron-active Tryptophan substitutions for higher stability and conductivity.
- Utilized **PyMOL** and Python for molecular modeling and structural simulations.

**Structural Biology & Protein Engineering Lab, IIT Kharagpur** Nov 2023 – Jan 2024

*Winter intern — Prof. Soumya De*

- Learned about designing novel peptides that can inhibit protein-protein interactions linked to specific cancer signalling pathways
- Wet lab - Performed plating, Molecular cloning, SDS PAGE, PCR, Site-directed mutagenesis, Protein purification (Ni-NTA Affinity Chromatography), Primary culture & protein expression
- Computational – Analysis of protein structures in PyMOL and executing energy minimization algorithms in ROSETTA

## SKILLS

---

- **Languages:** Python, MATLAB, C, Julia
- **Frameworks/Tools:** Qiskit, PyTorch, NumPy, Pandas, Matplotlib, PyMOL, Rosetta
- **Methodologies:** Mathematical Modelling, Stochastic Simulations, Deep Learning, Structural Bioinformatics
- **Wet Lab:** Molecular Cloning, SDS PAGE, PCR, Site-directed Mutagenesis, Protein Purification (protein engineering techniques)

## COURSEWORK

---

*\* indicates ongoing course*

- **Biotechnology:** Microbiology, Cell & Molecular Biology, Biochemical reaction engineering, Bioinformatics\*
- **Programming:** Systems Biology – Modelling & Control, Computational neuroscience, Computational biophysics, Machine learning in Biological systems, Programming & Data structures, Quantum mechanics & Quantum computing\* [[Course Projects](#)]
- **Chemical Engg:** Thermodynamics, Transport Phenomena, Biochemical Engineering, Advanced Mathematical Techniques, Advanced Fluid Dynamics, Computer aided process engineering, Advanced Mass Transfer\*, Advanced Heat Transfer\*, Process Dynamics & Control\*