Pranjali Sharma

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CAREER OBJECTIVE

Bioinformatician with a background in molecular biology and expertise in high-throughput sequencing data analysis, transcriptomics and integrative genomics. Interested in statistical modeling, advanced deep-learning approaches in understanding complex biological systems.

EDUCATION

Master of Science in Bioinformatics
Devi Ahilya Vishwavidyalaya, Indore, M.P. India
Expected: July 2026 | **CGPA : 9.54**

Bachelor of Science in Microbiology
Acropolis Institute of Management Studies and Research, Indore, M.P. India
2024 | **CGPA: 8.58**

Higher Secondary Education
St. Arnold's School, Lalaram Nagar, Indore, MP, India
2020 | **Percentage:** 89%

EXPERIENCE

Masters Dissertation - Bioinformatics
CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, India
2025 - Present

- Working on a project titled **"context-aware transcription factor binding prediction"**
- Performing **CLIP-seq** data analysis for **RNA-binding protein (RBP)** binding site identification
- Applying co-deep learning approaches (Densenet and transformer) to predict RBP binding sites from sequence and transcriptomic features
- Developing computational frameworks to **model transcription factor (TF) binding** via the use of ChIP seq, ATAC seq, methylome, and RNA seq data under context-specific regulatory conditions
- **Constructing regulatory interaction networks** integrating proteins and transcription factors to infer binding outcomes
- Developed a **machine learning model for prediction of continuous log transformed singal values for ATAC seq for** any give DNA sequence, in any given cell type with a prediction **accuracy of 92.5%**

Summer Research Intern - Bioinformatics
ICMR-National Institute of Cancer Prevention & Research (ICMR-NICPR), Noida
May 2025 -July 2025

- Worked on a project titled "**ceRNA (competitive endogenous RNA) mechanisms and their role in the proliferation of cervical cancer"**
- Systemised a **comprehensive review of 300+ research papers on cervical cancer and lncRNA regulatory mechanisms**
- Predicted **RNA-RNA interactions** using NCBI, miRBase, miRanda, miRDIP, miRNet, DIANA Tools

- Applied **R (multimir, openxlsx, dplyr) and Python (pandas, BioPython, Entrez, numpy)** for statistical analysis, coding, and data curation

SKILLS

- **Programming, Scripting and ML**: Python (Pandas, NumPy, Scikit-learn, BioPython), R (tidyverse, ggplot2, Bioconductor, multimir), Shell Scripting (Bash), Java, C/C++, MySQL, HTML, ML(Predictive Modeling, Statistical Modeling, Feature Engineering, Neural Networks, DenseNet, Gaph Transformers, Integrative Genomics.)
- **Bioinformatics & NGS Analysis:** RNA-Seq, CLIP-Seq, ChIP-seq, ATAC-seq; Tools: STAR, HISAT2, Bowtie2, Piranha, Peakachu, SRA Toolkit, Trimmomatic, fastp, Cutadapt, FastQC, MultiQC.
- **Biological Databases:** NCBI (Entrez), miRBase, miRNet, TRRUST, DIANA Tools, STARBASE, miRDIP, miRanda, BLAST, Clustal Omega.
- **Tools & Operating Systems:** Linux/Ubuntu (Advanced), Git/Version Control, Microsoft Excel (Advanced), Windows.

CONFERENCES AND SEMINARS

- Presented work on **Multi-model ATAC seq (chromatin accessibility) continuous signal predictor** at online conference **COPM 2026** organised by **Silesian University of Technology, Poland**. The abstract of this work is published in **Book of abstracts COPM** which can be found here: https://www.copm.polsl.pl/

CERTIFICATIONS

- **Fundamentals of Computational Biology - CSVTU, Bhilai:** Learned the principles of algorithms and statistical models used for analyzing biological sequence data.
- **Python Programming - Eminent Biosciences, Indore:** Acquired the ability to write scripts and develop pipelines for processing and visualizing biological datasets.
- **R Programming - Eminent Biosciences, Indore:** Understood how to perform statistical analysis and create data visualizations for bioinformatics research using R.
- **Molecular Biology & Biochemical Techniques - Ethical Edufabrica Pvt. Ltd.:** Gained hands-on experience with essential lab techniques such as PCR, electrophoresis, and chromatography.
- **Neurobiology & Metabolic Disorders - DAVV Indore:** Studied the physiological mechanisms of the nervous system and the biochemical basis of metabolic diseases
- **Plant Tissue Culture - Plantika Inc., Indore:** Learned aseptic techniques for micropropagation and the in vitro cultivation of plant cells and tissues.
- **Animal Tissue Culture - College of Veterinary Science & Animal Husbandry, Mhow:** Acquired practical skills in maintaining primary and established cell lines under sterile conditions.

REFERENCES

Dr. Hamendra Singh Parmar
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Dr. Pranoti Belapurkar
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