

# Shikha Singh

## Junior Research Fellow

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🐙 [github.com/shikha104](https://github.com/shikha104)

## EXPERIENCE

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**SCMIA, Pune, Junior Research Fellow (Research)** 04/2025 – Present | Pune

- Modelling and development of statistical shape intensity model of L1 spine. Working with statistical shape modeling framework using python and Scalismo.
- Skills: Meshlab, 3D slicer, Scalismo, Statistical Shape modeling, python programming, algorithmic understanding, medical imaging

**IBAB, Bengaluru, Research Assistant (Research)** 06/2024 – 03/2025 | Bengaluru

- Modelling histone variants that are h3.1 and h3.3 by implementing communication channel algorithm (Viterbi decoding and maximum likelihood).
- Processing raw reads data based on project requirement.
- Teaching Assistant: Python and Linux.
- Skills: IGV, Samtools, Deeptools, SRAToolkit, python programming, algorithmic understanding

## EDUCATION

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**Indraprastha Institute of Information Technology, Delhi,** 2022 – 2024

*M.Tech(Computational Biology)*

- CGPA: 8.85

**Noida Institute of Engineering and Technology, Greater Noida,** 2017 – 2021

*B.Tech(Biotechnology)*

CGPA: 8.5

**Kendriya Vidyalaya No. 1, Delhi cantonment, New Delhi,** 2016 – 2017

*CBSE 12th*

- Percentage: 78.6%

**Kendriya Vidyalaya No. 1, Delhi cantonment, New Delhi,** 2014 – 2015

*CBSE 10th*

- CGPA: 8.6

## SKILLS

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**Programming Language** (Python • HTML/CSS • SQL • R • Scala) | **Tools and Technologies** (Mendeley, Turnitin, Pandas, Matplotlib, NumPy, Linux, Shell scripting, Machine learning, Bioinformatics tools/pipelines, Mordred, RDKit, Medical Imaging Analysis, Image Registration) | **Technical Electives** (Statistical Mathematics • Engineering drawing • Communication • Machine learning in biological applications • Linear algebra • Calculus)

## INTERESTS AND HOBBIES

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Reading | Bharatnatyam | Sketching | Creative writing

## POSITIONS OF RESPONSIBILITY

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|-----------------------------------------|-------------------|
| <b>President</b>                        | 07/2019 – 08/2021 |
| <b>Member</b>                           | 07/2018 – 08/2021 |
| <b>Editorial member</b>                 | 07/2018 – 08/2021 |
| <b>Senior Analyst (Probation)</b>       | 04/2021 – 06/2021 |
| <b>Dean Student Welfare Coordinator</b> | 07/2018 – 03/2021 |

## PROJECTS

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| <b>Developing graph theory-based model to predict scoring function</b>                                                                                                                                                               | 07/2023 – 04/2024 |
| - Comparing graph-based approach with voxel-based approach, developing GCN and GNN based model to predict binding affinity.                                                                                                          |                   |
| <b>Blood-brain barrier permeability prediction using ML model</b>                                                                                                                                                                    | 05/2023 – 07/2023 |
| - Classification for drug BBB permeability prediction<br>- Comparing different machine learning algorithm performances.                                                                                                              |                   |
| <b>To predict function of non-coding RNA using publicly available single cell gene expression profile using ML,</b><br><i>Team Size-5</i>                                                                                            | 11/2022 – 12/2022 |
| - The prediction of non-coding RNAs (ncRNAs) function to regulate gene expression at the transcriptional and post-transcriptional level.                                                                                             |                   |
| <b>Investigating the Indian Medicinal Plants as Potent inhibitors against Spike and Main protease of Covid-19: A Computational study,</b> <i>Team Size-2</i>                                                                         | 04/2021 – 08/2021 |
| - Study sought to compare the efficacy of natural compounds derived from Indian medicinal plants against the Covid-19 major protease and Spike glycoprotein to three mainstreams drugs: Quinine, Remdesivir, and Hydroxychloroquine. |                   |
| <b>Investigation of inhibitory potential of bioactive compounds of Allium sativum and Allium cepa against COVID-19: Molecular Docking Approach,</b> <i>Team Size-6</i>                                                               | 08/2020 – 07/2021 |
| - The research objective was based on the molecular docking study of inhibition of the main protease of COVID- 19 by natural compounds found in Allium sativum and Allium cepa.                                                      |                   |

## INTERNSHIP

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| <b>Hellbent software and educational services LLP</b><br><b>(Industrial/ Research)</b>   | 10/2020 – 12/2020 |
| - Wrote dissertations, report, and business proposals. Edited various academic documents |                   |