

BIBHU PRASAD BEHERA

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Research Interest: Deep Learning; Database development (frontend, backend and deployment); Bioinformatics; Drug Repurposing; Bio-Image Analysis; Startup founder

Publication:

- Peptaloid: A Comprehensive Database for Exploring Peptide Alkaloid (Research Article) [Journal of Chemical Information and Modeling. (Accepted)] (**First Author**) <https://pubs.acs.org/doi/10.1021/acs.jcim.4c01667> - Paper link
- Single Cell RNA Sequencing and Data Analysis (Book chapter) [Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, Elsevier. (**in press**)] (**Third Author**) <https://doi.org/10.1016/B978-0-323-95502-7.00209-8>
- Preprint Commons: A Database for Tracking Trends, Impact, and Collaboration in Open Science (Research Article) (**Manuscript in communication**) (**First Author**) [link](#)
- DeepMotifInteract: A Motif-Aware Neural Architecture for PPI Prediction (**Manuscript in communication**) (**Equal Contribution**) [link](#)

Conference & Presentation: [link](#)

- 1st AIRSA-IRCON conference 2025 (**AIIMS DELHI**) - Poster Presentation
- 10th BGCI conference 2025 - (**RIMS RANCHI**) - Speaker
- 17th Biocuration conf 2024 (**IBDC-RCB DELHI**) - Poster presentation
- Accelerating Biology 2025: (**CDAC PUNE**)- Poster presentation
- NCURB 2024 (**IISER TVM**) - Speaker

Work Experience:

2025 Working as **Freelancer** (**2025 oct onwards**)

2024 Working at **Shodhaka** (**2024 Dec onwards**) as a **consultant**, contributing to projects involving scRNA-seq analysis, multivariate metagenomics analysis

2024 Working at **DEEPGENE C-CAMP** bangalore (**2024 Sep - 2025 Oct**) : Using Whole Slide Imaging (WSI) as a Cost-Effective Alternative to High-Throughput, Expensive genetic testing for Cancer prediction (**Startup Incubation**) [link](#)

Earlier Machine Learning Projects:

- Locust Swarm Prediction using Machine Learning [link](#)
- Economic Impact of Nuclear Energy Using Machine Learning [link](#)
- Rain prediction (Kaggle competition - 6th place) [link](#)
- Other miscellaneous projects [link](#)

Achievements & Qualifications:

- Qualified **CSIR NET** (All India Rank: 246)
- Qualified **GATE** (All India Rank: 6999)
- **Kaggle Competition (Rain Prediction) – 6th Place** (2024)

Education:

- 2019-24** NISER (Int. M.Sc in Life Sciences)
- 2017-19** Khallikote college, Brahmapur (+2 Science CHSE)
- 2007-17** Kendriya vidyalaya, Brahmapur (10th std CBSE)

Internship Experience:

- 2024** Internship under Dr. BINAY PANDA, C-CAMP bangalore (2024 Mar - may) ([link](#)) Project: **Use of WSI as a substitute for low cost pathology instead of high throughput and expensive methods to stratify patients**
- 2023** Internship under Dr. V BADIREENATH KONKIMALLA, NISER (2023 May - July)(have done more than twice) ([link](#)) Project: **Creation of Peptide Alkaloid Database**
- 2022** Internship under Dr. ANUPAM NATH JHA, Tezpur University (2022 May - july) ([link](#)) Project: **FKBP5: Its Impact on Stress, Sepsis, GR Signaling, and Expression in PD-L1.**

Dry lab Skills:

- **ML, DL, Object Detection, Multimodal etc.; NGS for scRNA, bulkRNA; Full stack developer; Bioinformatics.**
- **Programming Languages/Frameworks:** Python and R, Shell scripting, HTML, CSS, Javascript, React, Django, MySQL etc.
- **Machine learning:** scikit-learn, XGBoost, Keras, LightGBM, CatBoost, TensorFlow, Statsmodels, OpenCV, slideflow. etc.
- **Packages:** **Python:** RDkit, Keras, Pandas, NumPy, Matplotlib, Seaborn, Plotly, PyTorch, Plotlib, Pyplot, scipy, pycaret, mpl_toolkits.mplot3d, tqdm, glob, rasterio, beautifulsoup, scarpy. **R:** TCGAbiolinks, Bioconductor, dplyr, tidyverse, ggvenn, ggplot2, limma, affy, oligo, DESeq2, edgeR and clusterProfiler. Etc.

Wet Lab Experience:

- **Molecular Biology Techniques:** Cloning, primer design, restriction digestion, ligation, transformation (B303, B305, B498) · PCR · Gel electrophoresis (B141/B142, B241, B344) · Nanodrop spectrometry (B302, B305).
- **Biochemistry & Protein Analysis:** SDS-PAGE · Western blotting (B203, B302) · Enzyme assays · Column chromatography (B405, B454).
- **Cell Culture:** Mammalian cell culture (B304, B402) · Fluorescence/confocal microscopy (B306).
- **Microscopy:** Bacterial/fungal culture, Gram staining, antibiotic testing (B201) · Hormone assays, electrophysiology (B301, B455).

Failures:

- Tried launching a startup with a multi-modal ML model to predict cancer from H&E-stained images, but faced challenges in deployment and market validation, leading to its discontinuation.
- Attempted to develop a **drag-and-drop NGS analysis tool**, but the project didn't progress due to resource constraints and shifting priorities.