

ISRA AMAN AZIZ

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PROFESSIONAL SUMMARY

Bioinformatics graduate with hands-on experience in transcriptomics (RNA-Seq, miRNA-Seq) and metagenomics (16S rRNA analysis using QIIME2), and standard NGS pipelines. Skilled in Python, R, and Bash for data analysis, with exposure to statistical testing, data visualization, and biological interpretation. Experienced in working with public datasets (GEO/SRA) and translating results into structured scientific reports. Actively seeking entry-level bioinformatics analyst roles.

SKILLS

Programming: Python, R, Bash

Bioinformatics & NGS Analysis: RNA-Seq, miRNA-Seq, 16S rRNA (QIIME2, DADA2), DESeq2, FastQC, fastp, STAR, Salmon, SAMtools, PCoA, alpha/beta diversity, miRNA target prediction (mirdb), functional enrichment (Metascape), network analysis (Cytoscape)

Databases: NCBI (GEO, SRA, GenBank), PDB, PubChem, IMPPAT

Tools & Platforms: Galaxy, Git, GitHub, Jupyter Notebook, RStudio, Colab, conda/mamba

Wet Lab: PCR, qPCR, agarose gel electrophoresis, microbial culture, spectrophotometry

Research: Experimental design, data analysis, scientific writing, MS Word, MS Excel

EXPERIENCE

Babasaheb Bhimrao Ambedkar University, Lucknow, India

December 2025 – May 2026

- *Dissertation Trainee*

- Built an end-to-end pipeline for miRNA-Seq analysis using **30+ samples** from NCBI GEO datasets for schizophrenia patients
- **Performed** QC, normalization, and differential expression analysis using DESeq2 in R
- Developed publication-ready volcano, heatmap, and MA plots for gene/miRNA profiling using ggplot2
- Conducted miRNA discovery and quantification using miRDeep2 via cloud computing platform
- **Predicted and validated** miRNA-mRNA interactions using mirdb.
- **Implemented supervised ML models including Random Forest, Logistic Regression and LASSO** for miRNA based classification.
- Evaluated model performance using ROC-AUC, cross-validation metrics.
- Constructed and visualized complex regulatory networks to enhance biological data analysis using **Cytoscape** and **STRING PLUGIN**.
- Maintained reproducible workflows using Git and GitHub.

BioinfoCore Solutions Pvt Ltd, Lucknow, India

February 2025 – May 2025

- *Research Intern*

- **Performed** end-to-end 16S rRNA microbiome analysis using **200+ samples** from 6 public GEO Datasets.
- **Investigated** gut dysbiosis in Alzheimer's and COVID-19 cohorts using **QIIME2** and Galaxy, contributing to insights into disease-associated microbial shifts.
- **Executed** comprehensive data preprocessing, **DADA2-based filtering**, and taxonomy assignment for large datasets.
- **Generated publication-ready** diversity visualizations, including PCoA, heatmaps, volcano plots, and barplots, to effectively communicate complex findings.
- Prepared a research manuscript based on findings for submission to a peer-reviewed journal.

Amity Institute of Biotechnology, AUUP, Lucknow, India

January 2024 – May 2024

- *Research Intern*

- **Conducted** extensive molecular docking studies and virtual screening of **50 phytocompounds**, identifying potential novel ligands targeting breast cancer.
- Utilized a suite of bioinformatics tools (PDB, PubChem, IMPPAT, SwissDock, SwissADME, CBDOCK) to analyze and prioritize bioactive compounds.
- **Contributed** to the computational pipeline for early-stage drug discovery, identifying promising therapeutic candidates.

- Project Trainee

- **Investigated and developed a** bioinoculant producer (*Azospirillum*) for sustainable agricultural applications.
- Performed a range of laboratory techniques including sterile sampling, culture media preparation, microbial isolation and screening, PCR, AGE, MIC determination, spectrophotometry, and standard curve generation.
- **Optimized experimental protocols** for microbial growth and characterization, contributing to research efficiency.

EDUCATION

Babasaheb Bhimrao Ambedkar University, Lucknow

Lucknow, India

MSc Bioinformatics

2024 – 2026

- CGPA: 7.98/10

Amity University Uttar Pradesh, Lucknow

Lucknow, India

BSc Microbiology (Honours)

2021 – 2024

- CGPA: 9.74/10

PUBLICATIONS

Published:

- **Isra Aman Aziz**, Jyoti Prakash, Rachna Chaturvedi, Ruchi Yadav. Computational Exploration of Natural Compounds as Potential Ligands Targeting Breast Cancer. *Asian Journal of Pharmaceutical Research and Health Care* 16(4):p 410-418, Oct-Dec 2024.
DOI: 10.4103/ajprhc.ajprhc_173_24
- Pallabi Chatterjee, **Isra Aman Aziz**, Amarjit Singh, and Aditi Singh. “Microbiome in Teenagers – Acquisition and Development.” In *BENTHAM SCIENCE PUBLISHERS eBooks*, 1–13, 2024.
<https://doi.org/10.2174/9789815274431124010003>.
- Shreetama Bhattacharjee, **Isra Aman Aziz**, and Aditi Singh. “Frangipani: A Common Plant With Antimicrobial Potential Against Common Bacterial Pathogens.” *International Journal of Pharmacy and Pharmaceutical Research* 30, no. 4 (January 1, 2024): 313–21. **<https://doi.org/10.25166/ijppr.2024.30.4.21>.**
- **Isra Aman Aziz**, Amaan Arif, Saba Hasan. Types of Carcinogens: Physical and Chemical Carcinogens, Introduction to cancer biology and genetics: *Cancer Genetics Unlocked* (2024). Notion Press.

Under review/In Revision:

- **Isra Aman Aziz, Prekshi Garg** (2026). Computational Microbiome Analysis Identifies Shared Microbial Dysbiosis Indicating Increased Risk of Alzheimer’s Disease Post-COVID-19 Infection (*Communicated to Bentham Science Coronaviruses Journal*)

CONFERENCE PRESENTATIONS & AWARDS

- **Poster Presentation**, Neuroscience Research Symposium 2025, **Centre for Brain and Mind (CBM) – National Centre for Biological Sciences (NCBS), Bangalore**
- *Microbiome analysis reveals shared dysbiosis linked to Alzheimer’s disease risk post COVID-19*
- **Oral Presentation**, 3rd International Conference on Recent Advances in Biotechnology and Nanobiotechnology (Int-BIONANO-2024), Amity University Uttar Pradesh
- *Furanocoumarins as potential anti-breast cancer agents via structure-based docking*
- **Oral Presentation**, International Conference on Recent Trends in Inter-Disciplinary Innovations Bridging Computer Science and Life Science (RTIICSM-2024), Rathinam College of Arts and Science, Coimbatore
- *Computational screening of natural compounds targeting breast cancer*
- **Best Poster Award**, National Symposium by Translational Biomedical Research Society (TBRs-2023)
- *Antioxidant potential of selected Indian plants and spices*
- **Best Poster Award**, International Conference on Sustainable Development and Disaster Resilience through Innovation (ICSDDRTI-2023), Amity University Uttar Pradesh
- *Antimicrobial potential of frangipani against bacterial pathogens*

EXTRACURRICULARS

- **Student Co-ordinator, Entrepreneurship Cell, AUUP** June 2023 – March 2024
Promoted E-cell incubation and anchored for Events at Incubation cell.
- **Student Group Leader**, Navreeta Foundation Aug 2022 – Jan 2023
Advocated for Women's Rights and Menstrual hygiene.
- **Volunteer**, Hamari Pahchan NGO Mar 2023 – May 2023
Supported education for underprivileged children.