

EDUCATION

Freie Universität M.Sc. in Bioinformatics, <i>Grade: 2.4</i>	Berlin, Germany 2020–2025
Jaypee University of Information Technology (JUIT) B.Tech. in Bioinformatics, <i>Grade: 6.6</i>	Waknaghat, India 2013–2017

EXPERIENCE

Systems Medicine of the Liver, Humboldt-Universität zu Berlin Internship	Berlin, Germany Jan 2025–Feb 2025
– Created a physiologically based pharmacokinetic model for Tirzepatide using curated clinical data and parameter optimization. [5]	
Theoretical Biophysics, Humboldt-Universität zu Berlin Master Thesis	Berlin, Germany May 2024–Jan 2025
– Built & validated an optimization framework to reconstruct triple-negative breast cancer phosphorylation networks from LC-MS and kinase-substrate data using Differential Evolution and Sequential Least Squares Programming. [4]	
Mathematics Tuition Teacher Self-Employed	Allahabad, India Apr 2019–Sep 2019
Graduate Aptitude Test in Engineering (GATE) Biotechnology, <i>All India Rank 681</i>	Allahabad, India Aug 2017–Feb 2018
Bioinformatics and Systems Biology, JUIT Bachelor Thesis	Solan, India Feb 2016–March 2017
– Built a pipeline using GEO2R, MeV, WB-DEGS, and R/Shiny to identify and validate prostate cancer biomarkers.[6]	
Computer Aided Drug Design, JUIT Project	Solan, India Aug 2015–Mar 2016
– Developed a docking workflow in Discovery Studio, Maestro, and Glide XP to screen FDA-approved drugs against the Dopamine D3 receptor and analyze protein–ligand interactions in PyMol & VMD.	

PROJECTS

PhosKinTime	May 2024–May 2025
– Optimization driven ODE-based modeling package for analyzing cell-signaling dynamics over time. [4]	
CodonAnalyzer	Jan 2025–May 2025
– Snakemake workflow for analyzing codon usage, extracting ORFs, translating sequences to protein, and computing hydropathy profiles. [1]	
Illumina2Lineage	Jan 2025–Present
– Nextflow pipeline for SARS-CoV-2 genome assembly and analysis from Illumina reads. [3]	
GRmap	Jan 2025–Present
– Snakemake pipeline for matching sequencing reads to a reference genome and annotating genomic features. [2]	

SKILLS

 Python

 R

 Bash

 Perl


 nextflow

 Git

 L^AT_EX


 Julia

 Algorithms

 Academic Writing

 snakemake

 Scientific Programming

 Data Mining

 Project Development

 Data Analysis

LANGUAGES

English: Native, Hindi: Native

CONFERENCES

- MATH+ Day 2024 with General Assembly and Poster Session Oct 2024
- National Symposium on Computational Systems Biology (NSCSB) Mar 2016
- R&D Expo, IEEE-JUIT May 2016
- RECOMB 2020 June 2020

PUBLICATIONS

- [1] A. **Mishra**, *Codonanalyzer: V1.0.2*, version v1.0.2, May 2025. DOI: 10.5281/zenodo.15384943.
- [2] A. **Mishra**, *Grmap: V0.2*, version v0.2, May 2025. DOI: 10.5281/zenodo.15390191.
- [3] A. **Mishra**, *Nf-illumina2lineage: V0.9.0*, version v0.9.0, May 2025. DOI: 10.5281/zenodo.15376065.
- [4] A. **Mishra**, *Phoskintime: V0.4.0*, version v0.4.0, May 2025. DOI: 10.5281/zenodo.15351017.
- [5] A. **Mishra** and M. König, *Physiologically based pharmacokinetic (pbpk) model of tirzepatide*, version 0.9.3, Mar. 2025. DOI: 10.5281/zenodo.14984688.
- [6] N. Asati, A. **Mishra**, A. Shukla, and T. R. Singh, “Gene expression studies to identify significant genes in ar, mtor, mapk pathways and their overlapping regulatory role in prostate cancer”, *Journal of Integrative Bioinformatics*, vol. 16, no. 3, p. 20180080, 2019. DOI: 10.1515/jib-2018-0080.