

Vinod Jangid

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PROFESSIONAL SUMMARY

CSIR-NET Qualified (AIR 46) Computational Biologist specializing in AI-driven drug discovery and structural biology. Proven track record in engineering automated bioinformatics pipelines and deploying machine learning models to accelerate target identification and optimize therapeutic candidates. Highly adept at leveraging molecular dynamics (MD) simulations, high-throughput virtual screening (HTVS), and predictive modeling to translate complex multi-omics data into actionable biopharmaceutical R&D insights.

TECHNICAL SKILLS

- **Machine Learning & AI:** Random Forest, SVM, Predictive QSAR Modeling, Clinical Outcome Prediction, Network Pharmacology
- **Computational Chemistry & Structural Biology:** High-Throughput Virtual Screening (HTVS), Hit-to-Lead Optimization, Protein-Ligand Docking, Free Energy Calculations, Homology Modeling
- **Bioinformatics & Multi-Omics:** RNA-Seq Pipelines (QC, Alignment, Differential Expression), TCGA Data Analysis, Pathway Enrichment (GO, KEGG)
- **Tools & Frameworks:** GROMACS, AMBER, AlphaFold, Rosetta, AutoDock, Schrödinger Suite, PyMOL, Chimera
- **Programming & Infrastructure:** Python, Bash, Linux/Unix, High-Performance Computing (HPC), Docker, Snakemake, Workflow Automation

PROFESSIONAL EXPERIENCE

Computational Immunologist, Katamaran Industries Pvt. Ltd.

March 2026 – Present

- Spearhead the computational engineering of T-Cell Engagers, utilizing advanced structural modeling and protein interaction analysis to optimize therapeutic efficacy and binding affinity.
- Execute oncology drug repositioning strategies by integrating molecular modeling and multi-omics data to systematically identify novel therapeutic indications.

Bioinformatics Researcher, bioinfoLink

Jan 2025 – Feb 2026

- Engineered a fully reproducible, containerized (Docker) RNA-Seq pipeline using Snakemake, automating analysis from raw reads to differential expression and reducing analyst hands-on time by 80%.
- Applied Random Forest and SVM models to TCGA multi-omics data for clinical outcome prediction, achieving an AUC of 0.85.

Bioinformatician & Research Associate, Growdea Technologies Pvt. Ltd. April 2023 – Dec 2024

- Deployed supervised machine learning architectures to predict molecular interactions, successfully identifying three high-potential lead compounds for a critical drug discovery pipeline.
- Developed predictive QSAR models and automated GROMACS MD workflows, reducing simulation setup time by 40% and significantly accelerating hit-to-lead optimization.
- Executed a high-throughput virtual screening (HTVS) campaign evaluating over 10,000 small molecules against a novel viral target utilizing AutoDock.
- Analyzed binding energetics and thermodynamic properties to prioritize the top 0.5% of candidate molecules for subsequent experimental wet-lab validation.

Project Intern, Indian Institute of Science (IISc), Bengaluru Jan 2022 – June 2022

- Designed and executed robust RNA-Seq analysis workflows, encompassing data quality control, sequence alignment, and differential gene expression analysis.
- Conducted comprehensive pathway enrichment analyses, leading to the discovery of a novel signaling pathway associated with omipalisib resistance in esophageal cancer cell lines.

EDUCATION

Master of Science in Bioinformatics | Bharathiar University, Coimbatore | 2020 – 2022

Thesis: *In-silico* approach to identify novel drug targets against stress granules for cancer treatment

Bachelor of Science in Biotechnology | Mohanlal Sukhadia University, Udaipur | 2017 – 2020

PUBLICATIONS & CERTIFICATIONS

- **Publication: 1st Author**, Computational Analysis to Identify Novel Drug Targets for Esophageal Cancer, *Medinformatics* (2024).
- **Publication: 4th Author**, Machine Learning Optimization Approach to Design Multi-Epitope Marburg Vaccine Construct, *Biosciences Biotechnology Research Asia* (2024).
- **Publication: 6th Author** | Computational analysis of Non-synonymous SNP effects on human PLVAP gene structure and function, *Journal of Applied Genetics* (2025)
- **Award: All India Rank 46, CSIR-UGC NET (Life Sciences)**: Qualified for elite lectureship and Ph.D. admissions nationally (Sep 2025).
- **Certification:** Genomic Data Science: Johns Hopkins University (Dec 2024).
- **Fellowship: Student Project Scheme Fellowship:** Tamil Nadu State Council for Science & Technology (Nov 2022).
- **Certifications:** Computer-Aided Drug Design (IIT Madras, 2021)
- **Certifications:** Human Molecular Genetics (IIT Kanpur, 2021).