HIMANI CHOUDHARY

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Experienced bioinformatics professional, with a proven track record of transforming complex biological datasets into actionable insights, developing automated analysis pipelines, and driving research innovation through advanced statistical modeling. Skilled in Python, R, Perl and Bash programming, machine learning and data visualization, and genomics/transcriptomics analysis. Looking for a new opportunity to apply my skills and continue developing my career in the biomedical industry.

SKILLS

Machine Learning, Deep Learning and Data Visualization: NumPy, Pandas, Scikit-learn, Matplotlib, ggplot2, seaborn, grid, lattice, PCA, clustering, regression, Tableau, tensorflow and keras.

Pipeline Development & Model Evaluation: A/B testing, cross-validation, performance metrics, bias detection and mitigation Python and R

API Integration: FastAPI, database connectivity (MongoDB, mySQL(beginner))

Workflow Automation & Cloud Platforms: Bash scripting (Linux), Nextflow, error handling and monitoring, AWS (basic), containerization with Docker, distributed computing

MLOps Tools: Git/GitHub, MLflow, DVC, Kubernetes, CI/CD with GitHub Actions

Genomics: NGS, WGS, Velvet, BWA, Bowtie2, samtools, Vcftools, Bedtools, GATK
Transcriptomics: Trinity, MEGAHIT, spades, HISAT2, STAR, deseq2, edger, Pydesq2
Metagenomics, Epigenetics And Muti Omics: WGS, chip-Seq, ATAC-seq, Amplicon seq, shotgun seq DADA2, QIIME2, and MACS2, Phyloseq, PROKKA, Kracken2 Gseapy and GWAS

Databases And Servers: KEGG, NCBI, ENSEMBL, Genbank, jbrowser, TCGA, SRA, GEO, Silva, BLAST, CLINVAR, COSMIC db, cbioportal, pubmed, GDC Data Portal.

AWARDS:
GAT-B: Qualified (AIR-72)
DBT Scholarship: 2022 – 2024
GATE XL (2024) - Qualified

EXPERIENCE

Edgene Biomed Pvt Ltd | *Technical Head*

Sept 2024 – Present | Gurugram

- **Designed and deployed production-grade data analytics platforms** with Python-based APIs, processing **metagenomic and transcriptomics datasets** for clinical insights
- **Built automated ETL pipelines** using R and Python, and enabling real-time PDF report delivery to healthcare clients
- **Developed machine learning biomarker prediction models** utilizing cancer gene expression data, achieving **85%+ classification accuracy** for diagnostic applications
- **Led cross-functional collaboration** with clinical teams, implementing **QIIME2-based metagenomic analysis pipelines** with automated quality control and error tracking

PROJECTS

- **INTERNATIONAL PROJECT**
  - Blended Mobility Focusing on Norway-India Water-Soil Microbiome Nexus (NIWASm) in collaboration with University of Southeastern Norway.
  - Analyzed, visualized and interpreted metagenomics data

- **MASTER THESIS**
  - Time series approach to detect structural signatures in proteins using conformational states potentials using statistical modelling

- **PREDICTIVE HEALTHCARE ANALYTICS PLATFORM**
  - Built end-to-end machine learning solution for breast cancer classification using gene expression profiles, achieving 92% prediction accuracy

- **DEEP LEARNING FOR MEDICAL IMAGE ANALYSIS**
  - Developed CNN-based classification system for disease detection in medical imaging data. Implemented data augmentation and preprocessing pipelines handling large-scale unstructured medical datasets

EDUCATION

M.SC. BIOINFORMATICS
Bioinformatics Centre, Savitribai Phule Pune University, Pune
CGPA – 9.6 (Aug 2022 – May 2024)

B.SC. BIOTECHNOLOGY
Department Of Biotechnology, Central University of Rajasthan
CGPA – 8.15 (July 2019 – May 2022)

CERTIFICATIONS

WORKSHOP ON "GENERATIVE AI APPLICATIONS IN SCIENTIFIC RESEARCH AND INDUSTRIAL PROBLEMS":

The workshop provided an introduction to fundamental AI/ML/DL techniques and their practical implementation in the development of generative AI servers. It also explored their relevance in biological research, particularly in precision medicine and the use of generative AI for disease diagnosis.

BIOINFORMATICS CENTRE, SPPU; DEPARTMENT OF MATHEMATICS, SPPU; PERSISTENT SYSTEMS, PUNE (JAN 2024)

WORKSHOP AND SYMPOSIUM AS A PART OF UTFORSK PROJECT, "BLENDED MOBILITY FOCUSSING ON NORWAY INDIA WATER SOIL MICROBIOME":

The workshop featured a series of lectures, project discussions, and interactive sessions focusing on the exploration of scientific research concepts related to the soil-water microbiome nexus between Norway and India.

DEPARTMENT OF NATURAL SCIENCES, UNIVERSITY OF SOUTHEASTERN NORWAY, BO, TELEMARK, NORWAY (SEPT 2023)

WORKSHOP AND SYMPOSIUM AS A PART OF UTFORSK PROJECT, "BLENDED MOBILITY FOCUSSING ON NORWAY INDIA WATER SOIL MICROBIOME":

The workshop covered the basics of metagenomic data analysis, including various pipelines used to extract different analytical insights from the data. This included an overview of the DADA2 pipeline, which is based on the R programming language. Additionally, we were introduced to geological survey data related to soil, and there were also opportunities for site visits.

BIOINFORMATICS CENTRE, SPPU (MARCH 2023)

HANDS-ON WORKSHOP ON "NGS DATA ANALYSIS OF VIRAL AND CLINICAL DATA":

Sessions on Illumina informatics solutions, hands-on COVID data analysis, as well as demonstrations of exome data analysis and variant interpretation techniques.

PREMAS LIFE SCIENCES, DELHI (MARCH 2023)

ONLINE COURSE ON "ENGINEERING MATHEMATICS":

The course covered various topics in differential calculus, integral calculus, linear algebra and differential equations with applications to various engineering problems.

IIT KHARAGPUR (NPTEL)

DEC – 2021 (12 WEEKS)

ONLINE COURSE ON "COMPUTER AIDED DRUG DESIGN":

The course covered structure and target-based design, molecular modeling, quantum mechanics, drug likeness properties, QSAR and pharmacokinetic and dynamics using several software like Autodock, MarwinSketch.

IIT MADRAS (NPTEL)

DEC – 2020 (8 WEEKS)

DECLARATION

I do hereby, declare that the particulars and facts shared herein above are true correct and complete to the best of my knowledge and belief.