

JASMEER SINGH KALRA

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

EDUCATION

MSc Life Science Informatics

Bonn-Aachen International Center for Information Technology (b-it) | Oct 2023 – Present

Cumulative Grade: 2.3

Bachelor of Engineering in Biotechnology (Minor: Economics)

Delhi Technological University | Jul 2020 – Jul 2023

Cumulative Percentage: 92.5%

Diploma in Computer Engineering

Amity University, Uttar Pradesh | Jul 2017 – Jun 2020

Cumulative Percentage: 80.4%

WORK EXPERIENCE

Thesis Student/Student Assistant

Fraunhofer SCAI | Apr 2025 – Present (Expected)

- Researched microbiome lab processes and designed FAIR-compliant data models for translational research.
- Automated ontology learning using LLMs, reducing data harmonization time by 30%.
- Mapped shared knowledge across microbiome communities using Python and Docker.

Web Development Intern & Editorial Assistant

ZB MED - PUBLISSO | Mar 2023 – Dec 2023

- Developed GDPR-compliant bibliographic tools using HTML/CSS/JavaScript for researchers.
- Automated data masking workflows, improving CMS efficiency by 20%.

Research Trainee (Ab-Open Lab)

CSIR – Institute of Microbial Technology (IMTECH) | May 2022 – Aug 2022

- Built SVM/Random Forest models for antimicrobial resistance diagnostics (Python).
 - Automated clinical isolate characterization pipeline using CLSI/EUCAST standards.
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TECHNICAL SKILLS

Programming Languages: Python, SQL, JavaScript, HTML, CSS

Machine Learning: Deep Learning, Neural Networks, Natural Language Processing (NLP), Data Analysis, Model Evaluation.

Tools & Technologies: PyTorch, TensorFlow, Keras, OpenCV, Docker, Git, Linux, MongoDB, Tableau, Galaxy Platform, QUAST, ABRicate, Bash

Others: Image Processing, Software Testing, Data Visualization, Database Management, Reference Management, Large Language Models (LLMs), Bioinformatics

PROJECTS

Royal Botanic Garden Fungal Specimen Database Managing Software

[GitHub](#)

Technologies: FastAPI, SQLAlchemy, Python, Docker, PDM, pytest

- Developed a data management system for fungal specimen data with FastAPI and SQLAlchemy.
- Created a RESTful API for CRUD operations and built a CLI for database management.
- Ensured test coverage with pytest and auto-generated API documentation (Swagger UI & ReDoc).

Galaxy-ASIST Automation Tool & Integrator Tool

[Galaxy](#)

Technologies: Python, Linux, QUASt, ABRicate, Galaxy Platform

- Developed automation and integrator tools for bioinformatics, streamlining data processing for multiple programs and consolidating results into a unified output.

Prescribing Drugs Using Customer Reviews

[GitHub](#)

Technologies: Pandas, NumPy, Matplotlib, NLTK, Seaborn

- Analyzed a dataset of 160K drug reviews, identifying the most useful and useless drugs for various conditions using Vaderlexicon and sentiment analysis.

Instagram Clone (Front-End Project)

[GitHub Link](#)

Technologies: HTML, CSS, JavaScript, React.js, Firebase

- Built an Instagram-style clone allowing users to sign up, log in, and post pictures and videos.

RESEARCH & PUBLICATIONS

Computational Biomarker Discovery for Huntington's Disease | Jan 2023 – Jul 2023

- Predicted pre-manifest Huntington's stages with 92% accuracy using CatBoost (Python).
- Published: 2023 5th ICIRCA Conference. DOI: [10.1109/ICIRCA57980.2023.10220841](#)

Galaxy ASIST Automation Tool | Sep 2022 – Jan 2023

- Developed Python/Linux tools for antimicrobial resistance profiling (QUAST/ABRicate).
- Published: Frontiers in Microbiology. DOI: [10.3389/fmicb.2022.1041847](#)

Machine Learning for AMR Gene Prediction | Jan 2024 – Present

- Training CNN/RNN models to predict antimicrobial resistance genes (PyTorch).

LEADERSHIP & VOLUNTEERING

Student Coordinator, ChemisTree Eco Club | Delhi Technological University

- Led 100+ activists to secure INR 10 lakh in sponsorships for sustainability events.

Millennium Fellow | United Nations Academic Impact

- Directed SDG 15 initiatives, including animal welfare campaigns and feeding drives.

Database Executive | National Service Scheme (DTU)

- Managed 1000+ volunteer records during COVID-19 blood donation drives.
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