Gurgaon, India
+91-7678531648
chaarvib@gmail.com

Chaarvi Bansal

Linkedin
Github
Personal website

Education

Dual Degree: Master of Science - Biological Sciences, Bachelor of Engineering - Computer Science **Aug 2018 — May 2023**
Birla Institute of Technology and Science Pilani, India
CGPA: 8.69/10
INSPIRE-SHE Scholar *Secured the coveted scholarship by The Department of Science and Technology (Govt. of India) for finishing in the top 1% in All India Senior School Certificate Examination 2018 and maintaining outstanding academic record in college.*

Relevant Coursework

Computer Science	Neural Networks and Fuzzy Logic, Object Oriented Programming, Data Structures and Algorithms, Database Systems, Computer Programming in C
Biological Sciences:	Stem Cell and Regenerative Biology, Bioinformatics, Recombinant DNA Technology, Biophysics, Genetics, Cell Biology, Biochemistry, Biomolecular Modelling
Mathematics:	Probability and Statistics, Linear Algebra, Multivariate Calculus

Research Experience

Research Intern & Project Student | CSIRO Australia **Jan 2022 — Present**
Project - MRFF Covid-19 Drug Repurposing Project FDA Covid-19 Systems Biology-AIML Project
Supervisors: Dr. Rohitash Chandra and Prof. S.S. Vasan

- Working with a team of international researchers to re-purpose drugs already approved for other diseases to fight COVID and its variants.
- Employing multiomics approach to evaluate the biochemical utility of shortlisted compounds.
- Responsible for designing the experiments and optimising the parameters involved using bayesian optimisation.

Summer Research Intern | North Eastern Space Application Center, Govt. of India **May 2020 — Jun 2020**
Project: QAi Toolbox: QGIS Plugin for Machine Learning and Deep Learning based Land Cover Classification
Advisor: Mr. Nilay Nishant
Government research lab serving eight states of India's North Eastern Region using space science and technology.

- Developed three advanced land cover classification models for integration with QGIS through a plugin (QAi Toolbox).
- Achieved a kappa score of **0.81** on pixel-based models and accuracy of **94.46%** on CNN-based image segmentation models.
- QAi Toolbox was selected amongst the **top 30** worldwide for presentation at **QGIS North America 2020**, an annual international conference conducted by OSGeo.

Technical Skills

Language	C, C++, Java, Python
Frameworks	Skicit-learn, Pytorch (Beginner), Tensorflow (Beginner)
Tools	MySQL, GIT

Academic Projects

Undergraduate Researcher, Department of Computer Science and Information Systems **Jan 2021 — Dec 2021**
Project: De-Novo Genome Assembler, Funding Period - 3 yrs

- Implemented a two-level hash table structure to reduce the retrieval time and to make the algorithm easy to distribute and parallelize.
- Designed a structure, sequence vector to cap the memory requirement at **2x** Insert Length/contig and reduced overhead memory cost.
- Devised a maximum voting algorithm to increase the intermediate assembly length by **30%**.

Undergraduate Researcher, Department of Biological Sciences **Jan 2020 — May 2020**
Project: MiRNA and Acquisition of Drug Resistance in Cancer Cells

- Analysed deep sequencing data of osteosarcoma cells in four different stages.
- Identified deregulated miRNA-mRNA sets responsible for the development of drug resistance to cisplatin.
- Studied and examined the impact of miRNA deregulation on cellular processes.

Achievements

MITACS Globalink Research Internship Scholar **Dec 2021**

- Awarded the MITACS Globalink Scholarship 2022 to work with Professor Kathrin Tyryshkin on the project, Modelling neuroendocrine neoplasms through graph neural networks and post-transcriptional gene regulatation at Queen's University, Kingston.