

Rajat Singh

Second Year Postgraduate
Department of Mathematics

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Education

Degree	Institution	CPI/%	Year
M.Sc	IIT Gandhinagar	8.20 (1st Year)	2022-Present
B.Sc	Ramjas College (DU)	8.227	2019-2022
Class XII	Kendriya Vidyalaya, Janakpuri	89.0	2016-2017
Class X	Kendriya Vidyalaya, Janakpuri	9.4	2014-2015

Internships

- **Trainee, VCF Visualisation Tool/App, Edu Bio India Pvt. Ltd.** [May-July 2023]
 - Developed a VCF (Variant Call Format - Gene Data) file analysis, data filtering and Visualization software using R and R Shiny Frameworks. Implemented data parsing and processing functions to extract relevant genetic information from VCF files.
 - Learned advanced genome data analysis techniques (such as GATK-Genome Analysis Toolkit) , data manipulation, data cleaning , visualisation tool development, managed large DNA and GFF files and learned web scraping (from life science databases - NCBI and KEGG).
 - Independently Developed a user - friendly interface that streamlined the Gene data analysis for genetic research.
 - Successfully developing the R Shiny software with positive feedback from internal and tested external users. Successfully collaborated with Bioinformaticians at the company to gather tool requirements.

Projects

- **Mathematical models in Epidemiology and Disease Spread, M.Sc Thesis Project** [Aug-Present 2023]
 - Studying and Analysing Models on Disease Spread such as SIR, SEIR and SIS models and their mathematical Properties and trends.
- **File Viewer Dashboard, R Shiny** [June 2023]
 - Developed a Shiny Dashboard that enables users to visualise Tabular Data Files with a specific separator. [Github Repository](#)
- **Personal Website, SC 335 (Web Development Course)** [Aug 2023]
 - Created a basic personal website incorporating CSS. Hosted on Github - [Github hosted link](#)

Achievements

- **IIT JAM Mathematics - AIR 295** [May-July 2022]
- **Secured admission offer at IISER, Bhopal for M.Sc in Department of Mathematics** [July 2022]
- **Finalist at MELAS Quiz, IIT Gandhinagar** [Nov 2022]
- **Completed 6 Courses of BS in Data Science, IIT MADRAS online degree with CGPA - 9.5** [Jan - Aug 2021]
- **Presented Model on Conveyors & Automation at RLSE, Delhi Region** [Feb 2016]

Skill Summary

- **Languages:** R (incl. Packages vcfR, class(ML), shiny, shinydashboard, etc.) , R Markdown
Python, C++, HTML (elementary), CSS (elementary)
- **Tools/Software:** Git and Github, Google Colab, SQL (basic commands), Procreate (Digital Design).

Extra-Curricular Activities

- **Active Table Tennis and Badminton player. Secured 1st place at AAROHAN (IITGN orientation 2022) in the badminton competition and competed at the KVS Regional Level Sports Meet in Table Tennis (2016).**
- **Successfully hosted the Farewell 2023 and Freshers 2023 events for the Mathematics Department, showcasing effective communication and presentation skills while engaging and entertaining the audience.**
- **Passionate about creating digital art using Procreate Software, fueled by a love for the creative process.**