Hiten Dalmia

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EDUCATION

Nov. 2022 – Present	**B. Sc.** (Hons.) Mathematics	KIRORI MAL COLLEGE, UNIVERSITY OF DELHI, DELHI

Majoring in **mathematics** with a minor's degree in **economics**. Current GPA (in %): **82.5**

Jul. 2020 – Jul. 2022	**Higher Secondary Certificate**	P. OBUL REDDY PUBLIC SCHOOL, HYDERABAD

Studied the subjects Physics, Mathematics, Chemistry, Computer Science and English.

RESEARCH PROJECTS

2025   *p*-**adic numbers**, Supervisor: Mr. B. Sèmthanga

- Studied the p-adic norm and its properties, Ostrowski's Theorem, construction of the field of p-adic numbers and their basic algebra, resulting in a 13-page report.
- Presented a talk on the p-adic metric space based on the report.

2024   **Tracing Closed Curves with Epicycles**, Supervisor: Prof. S. K. Kaushik

- In this paper me and my co-authors introduce the fundamental concepts of Fourier series and transforms (continuous and discrete), going into their mathematical formulations, properties and applications.
- Along with it is a python program that performs the discrete Fourier transform to animate closed curves (stored as SVGs) with epicycles.

2023   **Big-O Notation**, Supervisor: Prof. S. K. Kaushik

- Explored the mathematical foundations and applications of Big O notation in calculus and computer science, including algorithm complexity and asymptotic analysis.
- Emphasized rigorous formal definitions, graphical interpretation, and pedagogical approaches using Landau symbols for error estimation and function growth.

CORPORATE EXPERIENCE

Mar. 2023 – Present	**Independent & Fractal**	FREELANCE FULL STACK DEVELOPER

- Worked as a freelance full-stack web developer to support my college education, securing projects independently on Upwork and through Fractal, a freelance agency I co-founded.
- Developed a range of internal business applications, e-commerce platforms, and designed digital media for brand communication, utilizing diverse web technologies and frameworks like Flutter, NextJS, Python (Tkinter, Selenium, Pandas), and others.

Oct. 2023 – Apr. 2025	**Tagglabs Experimental Pvt. Ltd., Gurgaon**	SOFTWARE DEVELOPER (PART-TIME)

- Began as an intern and was subsequently retained as a part-time/contract software developer after three months, reflecting strong early contributions.
- Led the development of the alpha release of a cross-platform augmented reality, location-aware mobile application using Flutter for Android and iOS.
- Developed an internal Flutter package for the application, integrating the SIFT algorithm for feature matching via native C APIs and the OpenCV library. Used Python's Django library for the back-end server of the platform.

INDEPENDENT PROJECTS

2025   **Drawing My College's Logo on the Complex Plane**

- Implemented the Discrete Fourier Transform algorithm in Python to approximate the fourier series for SVG Paths using the DFT.
- Used Matplotlib to draw the logo onto the complex plane.

2024   **Data Analysis and Visualisation with Pandas**, Course Project

- Worked on a US Housing dataset with the python libraries Seaborn, Pandas and Numpy.
- Drew statistical inferences using Violin Plot, Scatter Plot, KDE Plot etc.
- Found correlations between various characterisitcs of the US Housing market using basic statistical descriptions.

2021   **Behavioural and Statistical Experiment**   RANDOMNESS CHALLENGE

- Test the ability of users to be random by asking them to click 6 identical buttons in a random fashion.
- Uses different statistical methods to analyse the data collected, uses a REST API to store data in an Object Relational Database.
- Made using ExpressJS, ReactJS, Heroku and MongoDB.

2021   **MERN Stack E-commerce Website**   CZ CREATION ONLINE SHOP

- A fully fledged e-commerce website for a small business taking their products online.
- It has user authentication using JWT tokens, CRUD operations like the ability to add items to cart, place orders, forgot password etc. implemented using a REST API.
- Made using MERN stack, hosted on Heroku.

2021   **Medicine Tracker Android App**   MEDCHECK

- An app made using React Native that tracks your medicines for you and warn you whenever a particular medicine is running low.
- Made using Expo, React Native, SQLite3.

2020   **Automatic Attendance System using Python and Tesseract-OCR**   BREEZE

- Enables a teacher conducting a class to take attendance effortlessly in Google Meet using the chat. Made using Python and Tesseract-OCR.

SELECTED COURSEWORK

Real Analysis	Complex Analysis	Multivariate Calculus
Abstract Algebra	Numerical Analysis	Linear Programming
Linear Algebra	Probability and Statistics	Financial Mathematics
Metric Spaces	Differential Equations	

EXTRACURRICULAR ACTIVITIES

Feb. 2023 - Present	**The Debating Society**, Kirori Mal College	MEMBER
Feb. 2023 - Jul. 2023	**Tensors, The Mathematics Society**, Kirori Mal College	CONTENT CO-HEAD
Nov. 2022 - Nov. 2024	**Parivartan, The Gender Forum**, Kirori Mal College	JOIN SECRETARY
Feb. 2023 - Nov. 2023	**IMPACT Project**, a non-profit consulting group	MEMBER
Jul. 2018 - Mar. 2020	**Energy Conservation Club**, D.A.V. Public School	ORGANISER

HONORS

2025	**Data Storycraft**, Symbiosis Center for Information Technology, Pune	1ST POSITION
2023	**Math Me If You Can (Mathematics Quiz)**, St. Stephen's College	3RD POSITION
2020	**ALAGS E-MUN (5th Edition)**, International Press	HIGH COMMENDATION
2019	**ISA Chemistry Scientific Concept Demonstration**	1ST POSITION

SKILLS

- **Languages:** Hindi, English, Telugu

- **Programming Languages:** Python, Javascript, C++, R, Mathematica, SQL, Dart

- **Tools:** Vim, LaTeX, Linux, Bash, NodeJS, Flutter, ReactJS, React Native, TallyPrime ERP, Adobe Photoshop