

# Hiten Dalmia

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## EDUCATION

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- 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

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

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- 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

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- 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	<b>Data Analysis and Visualisation with Pandas</b> , Course Project	
	<ul style="list-style-type: none"> <li>• Worked on a US Housing dataset with the python libraries Seaborn, Pandas and Numpy.</li> <li>• Drew statistical inferences using Violin Plot, Scatter Plot, KDE Plot etc.</li> <li>• Found correlations between various characteristics of the US Housing market using basic statistical descriptions.</li> </ul>	
2023	<b>Intersectional Analysis of Bama's Sangati</b> , Course Project	
	<ul style="list-style-type: none"> <li>• An intersectional analysis of a portion of the canonical text in Indian Feminist Literature, Sangati by Bama.</li> </ul>	
2021	<b>Behavioural and Statistical Experiment</b>	RANDOMNESS CHALLENGE
	<ul style="list-style-type: none"> <li>• Test the ability of users to be random by asking them to click 6 identical buttons in a random fashion.</li> <li>• Uses different statistical methods to analyse the data collected, uses a REST API to store data in an Object Relational Database.</li> <li>• Made using ExpressJS, ReactJS, Heroku and MongoDB.</li> </ul>	
2021	<b>MERN Stack E-commerce Website</b>	CZ CREATION ONLINE SHOP
	<ul style="list-style-type: none"> <li>• A fully fledged e-commerce website for a small business taking their products online.</li> <li>• 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.</li> <li>• Made using MERN stack, hosted on Heroku.</li> </ul>	
2021	<b>Medicine Tracker Android App</b>	MEDCHECK
	<ul style="list-style-type: none"> <li>• An app made using React Native that tracks your medicines for you and warn you whenever a particular medicine is running low.</li> <li>• Made using Expo, React Native, SQLite3.</li> </ul>	
2020	<b>Automatic Attendance System using Python and Tesseract-OCR</b>	BREEZE
	<ul style="list-style-type: none"> <li>• Enables a teacher conducting a class to take attendance effortlessly in Google Meet using the chat.</li> <li>• Made using Python and Tesseract-OCR.</li> </ul>	

## 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	<b>The Debating Society</b> , Kirori Mal College	MEMBER
Feb. 2023 - Jul. 2023	<b>Tensors, The Mathematics Society</b> , Kirori Mal College	CONTENT CO-HEAD
Nov. 2022 - Nov. 2024	<b>Parivartan, The Gender Forum</b> , Kirori Mal College	JOIN SECRETARY
Feb. 2023 - Nov. 2023	<b>IMPACT Project</b> , a non-profit consulting group	MEMBER
Jul. 2018 - Mar. 2020	<b>Energy Conservation Club</b> , D.A.V. Public School	ORGANISER
	Led the state government initiated Energy Conservation Club in Grade 10 to recognition and merit by the Telangana state government.	

## HONORS

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

## SKILLS

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- **Languages:** Hindi, English, Telugu
- **Programming Languages:** Python, Javascript, C++, R, Mathematica, SQL, Dart
- **Tools:** Vim, L<sup>A</sup>T<sub>E</sub>X, Linux, Bash, NodeJS, Flutter, ReactJS, React Native, TallyPrime ERP, Adobe Photoshop