

# Adiba Ejaz

70 Morningside Drive • New York, NY 10027 • (646) 623-9275 • [adiba.ejaz@columbia.edu](mailto:adiba.ejaz@columbia.edu) • [linkedin.com/in/adibaejaz](https://www.linkedin.com/in/adibaejaz) • [github.com/adibaejaz](https://github.com/adibaejaz)

## EDUCATION

---

**Columbia University**, New York, NY

May 2023

*B.A. in Computer Science and Mathematics* (GPA: 3.926. Dean's List.)

Relevant coursework: Advanced Programming\* (*Unix*, *C*, *C++*). Modern Algebra I\*. Discrete Mathematics\*. Data Structures (*Java*). Honors Mathematics A and B (multivariable calculus and linear algebra). Principles of Economics. Summer seminar in *probability theory*: gave three talks on discrete random variables; Gambler's ruin problem; and transience and recurrence in simple random walks respectively.

**GEMS Modern Academy**, Dubai, UAE

May 2019

IBDP (GPA: 45/45, SAT 1570 800 Math 770 Verbal, 800 Math II). *Valedictorian*. *KS Varkey Scholarship*.

\* this semester

## SKILLS

---

- **Programming languages**: Java (proficient), Python (proficient), JavaScript, HTML, CSS.
- **Technologies & frameworks**: Git, LaTeX, MongoDB, Express.js, React.js, Node.js, Mathematica
- **Natural languages**: Trilingual in English, Urdu, Hindi. Semi-fluent in French.

## PROFESSIONAL EXPERIENCE

---

**Undergraduate Researcher. The Billinge Group, Columbia University.** New York, NY

May 2020-Present

- Authoring and maintaining *Python* scripts using test-driven development in *pytest* for Regolith, *NoSQL* research group database management software
- In team of 3, spearheading migration of Regolith projects interface from CLI to web app using *MERN* stack
- Building *matplotlib* tool for analysing grant burn and projecting future appointments on grants to balance budget
- Reviewing and assisting with 2 additional members' code projects on database querying

**Technical Intern. Dubai Future Accelerators.** Dubai, UAE

March 2018

- Researched optimal materials to locally engineer power over laser and optic fiber for wireless energy transfer
- Proposed regional applications of start-up's product in delivery drones and defibrillators for disaster relief
- Evaluated performance of proposed machine-learning based biometrics compared to dominant infrastructure

## RESEARCH

---

**Spectral graph theory applied to topological data analysis.** *Columbia University*.

May 2020-Present

Research under Professor Simon Billinge and Adjunct Scientist Michael Waddell in the Applied Physics and Mathematics department on developing an algorithm to extract homologies and filter noise of high-dimensional datasets using the Laplacian matrices of their persistence graphs.

**On the partitioning of  $n$ -spheres.** *International Baccalaureate*.

May 2018-19

Computational geometry research paper arriving at a result enumerating the optimal partitioning of  $n$ -dimensional spheres by hyperplanes. Grade A (awarded to top ~10% of candidates).

## LEADERSHIP AND ACTIVITIES

---

- **Debate.** Columbia Debate Society (Team Liaison: equity, team culture, & retention strategy). T5 Novice (American University, CUNY). Cornell Novice Finalist. UAE National Team – World Schools Debating Championships.
- **Technical.** Columbia Superposition (Technology Director: designing tech curriculum, lesson plans, workshops, and projects for students with varying experience levels). Columbia Association for Women in Math (gave 3 talks for seminar in *simple random walks*, summer 2020). Columbia Womxn in Computer Science.