

RAAHIL MULLICK
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EDUCATION

Dhirubhai Ambani International School , Mumbai, India	2011 – Present
• <i>International Baccalaureate Diploma Program</i> , Grades 11-12	2023 – Present
• <i>Cambridge International General Certificate of Secondary Education</i> , Grades 9-10	2021–23

TESTING

• IBDP Predicted Grade — 44/45	2024
• SAT — 1580/1600 [Math: 800/800; English: 780/800]	2023
• AP Statistics — 5/5	2024

ACADEMIC HONORS & AWARDS

School

• Co-Topper of 11 th Final Exams – IB Score 42/42 .	2024
• Topper in Math AA HL – 99% Avg.	2023
• Batch Topper in Physics HL – 92% Avg.	2024
• Topper in IGCSE Additional Math – 99 PUM.	2023
• Co-Topper in IGCSE International Math – 99 PUM.	2022
• 8 A* in IGCSE Board Exams.	2023
• Honor Roll in IGCSE Grades 9 & 10.	2022-23
• Subject Awards (Grade 10) in Add Math, Int Math, Physics, Chemistry, Computer Science, English, World Literature, Hindi.	2023

International

• Selected for SUMaC (Stanford University Mathematics Camp) Residential – Only Indian selected among 40 students worldwide.	2024
• AMC 12(A) – 123/150 ; Distinction (Top 5%) [Potential Candidate for DHR Top 1%].	2024
• AIME – 8/15 ; School Rank #1	2024
• AMC 12(A) – 115.5/150 ; Distinction (Top 5%).	2023
• Avogadro Chemistry Exam (UWaterloo) – World Rank #24/5100 .	2024
• SMT (Stanford Math Tournament) – World Rank #8/1500 in Calculus; Distinguished Honors in Algebra.	2024
• BMT (Berkeley Math Tournament) – World Rank #11/650 in Calculus; Honors in Algebra.	2024
• Pascal Contest (CEMC) – Top 1% – Student Honor Roll IV.	2022
• Hypatia Contest (CEMC) – Top 2% – Student Honor Roll IV.	2024
• Purple Comet! Math Meet – Top 3% .	2024
• AIMO (Asia International Mathematical Olympiad) Gold Medal.	2024
• HKIMO (Hong Kong International Mathematical Olympiad) Gold Medal.	2024
• PIMSO (Philippine International Math and Science Olympics) Gold Medal.	2024
• World Economics Cup – India Rank #3 .	2024
• A Beamline for Schools (BL4S) – Won Outreach Award – Top 3% of 461 teams.	2024
• Sir Isaac Newton Physics Exam (UWaterloo) – Top 10% .	2024

MATHEMATICS EXPERIENCES

Enrichment Programs

SUMaC (Stanford University Mathematics Camp) , Prof. Rick Sommer, Stanford, California.	2024
• Selected to attend the rigorous proof-based 4-week program on Number Theory & Abstract Algebra.	
• Studied algebraic structures like groups, vector spaces, rings, and fields. Learnt number theoretic applications like cryptosystems.	
• Investigated symmetry, polynomials, sphere-packing, and Galois theory. Culminated in a research project on polygon constructibility.	
Program in Algorithmic and Combinatorial Thinking (PACT) , Prof. Rajiv Gandhi, UPenn & Rutgers.	2023
• One month, intensive (12 hr/day) math program. Learned graph theory, combinatorics, probability, formal logic, set theory, and proofs.	
• Gained deep insights into mathematical concepts fundamental to Computer Science.	

Research

SUMaC Research Project , mentored by Prof. Rick Sommer, published in arXiv archive.	2024
• Researched the Gauss-Wantzel Theorem; investigated the necessary and sufficient condition on n for a regular n -gon to be constructible.	
• Used Cyclotomic Fields & Galois Theory to construct the connection between constructibility and Fermat primes.	

Fractional Calculus: Real-Ordered Derivatives & Integrals , Mathematics Extended Essay.	2024
• Conceptualized & characterized the Riemann-Liouville Fractional Derivative & Integral.	
• Investigated properties & implications and generalized the fractional derivative & integral of any polynomial.	
• Considered other approaches like Caputo & Grunwald-Letnikov. Researched real-world applications.	

Statistical Analysis of Noise Pollution Levels (Construction-Induced) in Pali Hill , Bandra, Mumbai.	2024
• Studied the effect of reconstruction on noise pollution levels in my locality, Pali Hill and evaluated the effectiveness of proposed solutions.	
• Analysed data from three different construction sites in Pali Hill. Investigated the variation of sound levels between different work stages.	
• Compared noise levels from different sides of the site to evaluate which residents are affected the most. Presented my research; campaigned.	

Internships

Tara Capital Partners India Pvt Ltd , Hybrid Internship, Mumbai.	2024
• Worked with Zhoufang Wei, Chief Risk Officer, to create a Monte Carlo Simulation model to accurately calculate the Value at Risk (VaR) of a given stock market portfolio. Learnt the importance of VaR in portfolio risk management and applications in trading.	
• Used Python to compute and interpret VaR to create a diverse and well-balanced portfolio. Implemented my model on Tara Capital Partners' real-world Indian market data and curated the portfolio accordingly.	

CHEMISTRY & ENGINEERING EXPERIENCES

Research

Hydrophilicity Molecular Simulations , mentored by Prof. Vishwanath Dalvi, Institute of Chemical Technology, Mumbai.	Jun–Dec 2024
• Investigating the difference between the global and local, surface hydrophobicity/hydrophilicity.	
• Using GROMACS to create Molecular Simulations of protein molecules and conducted experiments using the simulation to investigate the hypothesis. Culminating in a research paper to be published in a peer-reviewed journal by January.	
Evaluating an Alternative to Mercury Glass Thermometers , Research Internship with Mayuresh Associates, Mumbai.	Jun–Sep 2024
• Awarded CREST Gold by professionals in the field by achieving all 15/15 criteria (11/15 required for Gold).	
• Compared the accuracy, precision, range, repeatability, and response time of SafeTherm to Mercury thermometers.	
• Proposed SafeTherm as an alternative liquid due to the ban on mercury for its toxicity.	

Internships

Zelle Biotechnology Pvt Ltd , Analytical Laboratory, Mumbai.	2023
• Learned accurate use of the micropipette and pH meters. Applied techniques for buffer preparation. Learned protein separation methods.	

Enrichment Program

Young Technology Scholars (YTS), Engineering Program, Plaksha University, Punjab.

2023

- Received a scholarship to attend the two-week, intensive (10 hr/day) program.
- Captained my team of 5 students to develop a Robotic Arm that replicates Human Hand Movement using EMG Sensors.
- Used C++ to program an ESP32 and Arduino device to create the Robot.

CHESS INTERNATIONAL MASTER (IM)

Notable Awards

- Gold Medal at U-15 Asian Schools Championship, in Sri Lanka.
- Gold Medal at Asian Nations Cup.
- Gold Medal at Commonwealth Games.

2022

2021

Rankings

- World Number **#1** in U-12
- 2nd Youngest IM of India
- FIDE Elo 2399 (Peak)
- Indian National **Top 20** Ranked (U-17)

2019

2019

2023

2024

NATIONAL COACH: Indian Blind Players

Official National Coach for Indian Junior Blind

2024

- Personally training and mentoring the Indian contingent of four talented visually impaired players, Sam, John, Rahul, and Tanish.
- Preparing for the World Juniors Chess Championship in October 2024.

Chesscript.AI – An App for the Visually Impaired Chess Community

2024

- Chess books are great resources for easy and comprehensive learning. However, visually impaired chess players cannot access this high-quality resource, which hampers their training immensely.
- I am working under the mentorship of an AI/ML expert on my mobile app, Chesscript.AI, that will convert chess book PDFs into PGN, a useful file format for the visually challenged.
- Since chess books can come in various formats and types, the project is ambitious and technically difficult, requiring AI character recognition and advanced Large Language Models to understand and interpret the language of the text.

InVision Chess Academy – Empowering the Visually Impaired

2024

- Founded my own InVision Chess Academy to connect passionate visually impaired players with young mentors from around the world.
- The idea struck when three high schools from different countries heard about my work and approached me.
- Along with helping the blind community, I am inspiring the young generation of sighted people by enabling them to give back to society.

Asian Paralympics – HelpChess Foundation

2020–23

- Trained my students Sanskruti Vikas More, Kishan Gangolli, and Aryan Joshi to bronze medals at the Asian Paralympic Games.
- Worked with Sanskruti very rigorously before the tournament. Practiced with Kishan and Aryan through the lockdown.

OTHER COACHING EXPERIENCES

Unacademy Platform

2020–21

- Hired at 13 as Youngest Ever Educator on the Platform. Collaborated with multiple seniors coaches, including GM Vishy Anand.
- Remunerated (over \$4000) for live coaching (for 500 students) and creation of video lessons for 5000+ viewers.

Graphy App

2021

- Hired as chess educator and remunerated. Created short videos, clips, chess lessons, and more.

Conducted Chess Camp in Locality, Bandra, Mumbai.

2023

- Conducted a chess training camp for 10+ children aged 6-14 in my building society.
- Inculcated a love for chess in young children, inspiring several of them to enrol with full-time coaches.

LEADERSHIP INITIATIVES

Student Council – Jaguars Senior House Captain, Dhirubhai Ambani International School.

2023–24

- Awarded highest position in House Council. Led the 300+ Jaguars in 30+ Interhouse Cultural and Sporting Events.

DAIS Math Olympiad (DAISMO), Dhirubhai Ambani International School.

2024

Yearly event conducted by 12th grade students. This year, my team of twelve and I are conducting the olympiad by curating a list of math problems, developing problems on our own, and spreading the word about the event to schools globally.

- Raised INR 40,000 towards charity at EdYouth NGO. Organized 80+ participants from around the world.

School Chess Club – Founder & President, Dhirubhai Ambani International School.

2023–24

- Founded the club by proposing the idea to the CAS Office, initiating the activity, spreading the word, and gathering interested students.
- President of the club – I lead my team to conduct weekly training/playing sessions for 25+ students.

VOLUNTEERING & COMMUNITY OUTREACH

Social Activist for Pali Hill Residents' Association, Pali Hill, Bandra, Mumbai.

2024

- Started a campaign (using my research paper) to raise awareness (primarily among builders) of the rising noise levels in Pali Hill.
- Spoke to different builders, understood their perspectives, and advocated for Pali Hill residents by conveying the numerous problems we faced due to extremely high noise levels. Presented my work to BMC corporator for action by a higher authority.

NGO Group Leader, CAS Fete, Charity Fundraiser, Dhirubhai Ambani International School.

2024

- Raised INR 30,000 through three payment-based games (dizzy soccer, arm-wrestling, 7 bounces). Donated to Aseema Bandra NGO.
- Led my group of 12 students in preparations for the DAIS CAS Fete. Set up a stall at the fete, where we organized the above games.

Global Perspectives Team Project, Dhirubhai Ambani International School, Mumbai.

2022-23

- Raised awareness on women's safety. Collected 300+ survey responses from school faculty, housekeeping, and students.
- Interviewed self-defense martial-arts professionals. Delivered presentations on safety techniques to grades 8–11.

Holistic Tutoring at Aseema (NGO), Bandra, Mumbai.

2023–24

- Conducted weekly sessions to teach underprivileged children Math, Science, and English.

ICU2 Eye Camp, Malad, Mumbai.

2024

- Volunteered for a 7-hour eye-checkup service camp for underprivileged people in Mumbai – for people of all ages, ranging from 5-year-olds to 90-year-olds.

HOBBIES & PURSUITS

- **PADI Certified Scuba Diver** – received PADI certification for Open Water Scuba Diving in 2022. Dive time: 500+ min.
- School **Swimming** Bronze Medalist – Won Interhouse Swimming 25m breaststroke.
- Interhouse **Photography** Silver Medal, Dhirubhai Ambani International School.
- **Gym** Enthusiast, **Foosball & Table Tennis** Lover, **Recreational Soccer**, **Technology** Geek, and **World Traveller**.