

Mehedi Hasan Nowshad

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🐱 mehedinowshad.github.io/Nowshad_Projects/

Education

- M.S. in Mathematics, University of Dhaka, Bangladesh Jan 2024 – Sep 2025
 - Result: Soon to be published (Approximately in late September/early October)
 - Key Coursework: • Functional Analysis (Spectral Theory) • Algebra (with module and representation theory) • Dynamical Systems.
- B.S. (Hons.) in Mathematics, University of Dhaka, Bangladesh Jan 2019 – Dec 2023
 - CGPA: **3.76**/4.00 Position: **5th**
 - Key Coursework: • Number Theory • Analysis (Real & Complex) • Algebra (Linear & Abstract) • Topology • Differential Geometry • Measure Theory • Functional Analysis.

GRE Mathematics Test: Scaled Score **830** (77 Percentile)

Test date: 16 Sep, 2025.

Projects

All of my related project/thesis papers are available at my [Github page](#).

- **Reading Seminar:** “**Mordell-Weil** Theorem using **Galois Cohomology**”
 - *Key References:* • James Milne’s lecture notes on Fields and Galois Theory, Algebraic Geometry, Algebraic Number Theory, Elliptic Curves • Silverman’s “The arithmetic of elliptic curves” • Bjorn Poonen’s “Introduction to Arithmetic Geometry” • Andreas Gathmann’s “Algebraic Geometry”
- **M.S. Thesis:** “An Exploration in **Elliptic Genus** of a Manifold” (Supervisor: *Dr. Md. Shariful Islam*)
 - Interdisciplinary expository work involving the interplay between number theory and differential geometry
 - *Key References:* • “Manifolds and Modular Forms” by Hirzebruch et al. • Algebraic topology books by Hatcher, and J.P. May • Manifold, and Differential Geometry books by Loring Tu • “Characteristics Classes” by Milnor and Stasheff • “Spin Geometry” by Christian Bar • “Modular Forms” by Keith Conrad
- **Undergraduate Final Year Project:** Led a group project on **Sobolev Space Theory** to illustrate its importance in the analysis of PDEs. (Supervisor: *Dr. Salma Nasrin*)
 - *Key References:* • “Partial Differential Equations” by Lawrence C. Evans. • Functional Analysis books of Folland, and Kreyszig • “A course in modern mathematical physics” by Peter Szekeres
- **Book Publication:** Co-author of the book “*Aro Kichu Proman Koro Je*” (2021) (translation: “Let’s prove more”). It is a collection of elegant mathematical proofs, inspired by Aigner & Ziegler’s “*Proofs from the Book*”. (link: rokomari.com/book/217287/aro-kichu-proman-koro-j)

Achievements

- **International Mathematics Competition (IMC), 2022** (organized by University College London):
First Prize with a score **48**/80, ranked **88th** among 663 students, contributing to my team “Bangladesh” securing **10th** position out of 100 teams worldwide.
(Result link: imc-math.org.uk/?year=2022&item=results)
- **Iranian Combinatorics Olympiad (ICO):** **Bronze** Medal (2022)
(Result link: ico-official.com/en/2022/free-result, team name: “Bicycle Thieves”)
- **Iranian Geometry Olympiad (IGO):** **Bronze** Medal (2018, 2019)
(Result available at: igo-official.com, fifth and sixth event, free level)

- Winner at the *National level* of **Bangladesh Mathematical Olympiad (BDMO)** from 2015 to 2018.
- Selected for BDMO national camp (2015), **extension camps** (2016–2018) (Camp for Bangladesh **IMO team selection**)
- Winner at the *Regional level* of Bangladesh **Physics Olympiad** (2014, 2016, and 2018), Bangladesh **Astro Olympiad** (2015), and Bangladesh **Informatics Olympiad** (2015).

Skills

- Matlab • Mathematica • C++ • Fortran • \LaTeX

Interests

- Number Theory • Mathematical Physics • Chess • Philosophy

Language Proficiency

- IELTS Overall Band **7.5** (L: 8.5, R: 7.5, W: 7.0, S: 7.5) Test date: 24 Dec, 2024.
- Native speaker in Bangla.

Volunteering Experience

- **Trainer**, BDMO National Camp Mar 2022 – Present
- **Academic Team Member**, BDMO Dec 2018 – Present
(Tasks include things like question making, script checking, etc.)
- **Senior Vice President**, Chittagong Math Circle Mar 2020 – Mar 2023
Here we arrange training programs for high-school math enthusiasts in Chittagong (my hometown).
- **Trainer**, Chittagong Math Circle Dec 2014 – Feb 2020
- Organized a joint science experiments workshop with youth magazine *Kishor Alo* (Oct 2017)
- Conducted multiple training sessions at University of Dhaka (2020–Present) on undergraduate olympiad topics and problems.

References

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