

# MD. NIRAB HOSSAIN

## Lecturer

📍 Department of Applied Mathematics, University of Dhaka

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🌐 [University Profile Webpage - Md. Nirab Hossain](#)

🐙 [github.com/NirabHossain](https://github.com/NirabHossain)

🌐 [in md-nirab-hossain-2382a6210](#)

🐦 [twitter.com/NiirabH](https://twitter.com/NiirabH)

📍 Dhaka-1000, Bangladesh

## CAREER OBJECTIVE

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Want to be a top level researcher with higher research capabilities in the field of Data Science and Machine Learning. Also want to be an expert University teacher in Applied Mathematics.

## EDUCATIONAL BACKGROUND

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### Postgraduate (MS)

**Department of Applied Mathematics, University of Dhaka**

✔ GPA 4.00 out of 4.00

📅 March 2021 – August 2022

📍 Dhaka, Bangladesh

### Undergraduate (BS)

**Department of Applied Mathematics, University of Dhaka**

✔ CGPA 3.91 out of 4.00

📅 January 2016 – March 2021

📍 Dhaka, Bangladesh

### HSC

**Notre Dame College**

✔ GPA 5.00 out of 5.00

📅 June 2013 – May 2015

📍 Dhaka, Bangladesh

### SSC

**Gobarchapahat High School**

✔ GPA 5.00 out of 5.00

📅 January 2008 – March 2013

📍 Naogaon, Rajshahi, Bangladesh

## EMPLOYMENT HISTORY

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### Lecturer

**Department of Applied Mathematics, University of Dhaka**

📅 December 2022 – Present

📍 Dhaka - 1000, Bangladesh

- Instruct students at undergraduate level a range of courses with the engineering and applied mathematical discipline namely Discrete Mathematics, Theory of Numbers and Differential Geometry and Tensor Analysis to the 2nd year, 3rd year and 4th year students respectively with an average student count of 80 per class.
- Instruct 2nd year, 3rd year and 4th year programming labs in Python, MATLAB, Mathematica and Fortran.
- Revised the syllabus to meet accreditation standards; Coordinate grading and labs with a team of four teachers; Develop Incourse (Mid-term) exam questions, assignments and final exam questions.

### Adjunct Lecturer

**Department of Mathematics and Natural Sciences, School of Data and Sciences, Brac University**

📅 August 2022 – November 2022 📍 Dhaka - 1212, Bangladesh

- Instructed students Differential Calculus and Coordinate Geometry at undergraduate level in 5 different sections each of which contained 40 students.
- Consulted the students 3 hours a week besides their classes.
- Developed quizzes, assignments and exam questions; Conducted final exams.

### Research Assistant

**Department of Applied Mathematics, University of Dhaka**

📅 July 2020 – June 2022

📍 Dhaka - 1000, Bangladesh

- Worked as a Research Assistant in the field of Relativity and Cosmology on the basis of Data Science and Machine Learning.

## RESEARCH EXPERIENCE

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- Conducting an R&D research project on “Efficient Online Shadow Tomography via Noisy Quantum Channels: Overcoming Information Loss” under *Science and Technology ministry*. **Duration: July 2023 –June 2024**
- Supervising a research project titled “Anisotropic Universe model with time varying Cosmological constant, and time varying Quadratic Deceleration parameter in Bianchi type-V Line element” under *Bose Center for Advanced Study and Research in Natural Sciences*. **Duration: April 2023 –July 2024**
- Supervising five students of “BS Honours Final Year Project” on *Digital Image Processing and Face Detection with Data Science*. **Duration: September 2023 –July 2024**
- Supervised four students of “BS Honours Final Year Project” on *Cryptography and Machine Learning*. **Duration: September 2022 –July 2023**
- Successfully completed “MS Thesis” on *Modern Aspects of Relativity and Cosmology: A Machine Learning Approach to Hubble Parameter*. **Duration: July 2019 –June 2020**
- Successfully completed “BS Honours Final Year Project” on *Comparative Analysis on the AES and RSA Cryptographic Algorithms*. **Duration: July 2018 –June 2019**

## PUBLICATIONS

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- **Article Title:** Quantum State Reconstruction Through Online Shadow Tomography: Theoretical Framework and Simulation Results. **DOI: 10.3329/ganit.v43i2.70799**
- **Article Title:** Polynomial Deceleration Parameter Explaining Bianchi Type I Model. **DOI: 10.3329/ganit.v43i2.70795**
- **Article Title:** Future Possible Age of the Universe with Density Variation. **DOI: 10.5815/ijmsc.2022.04.07**
- **Another article** is submitted based on thesis titled “Modern Aspects of Relativity and Cosmology: A Machine Learning Approach to Hubble Parameter”.
- **Poster presentation:** “Comparative Analysis on the AES and RSA Cryptographic Algorithms” at “‘21<sup>st</sup> International Mathematics Conference – 2019”.

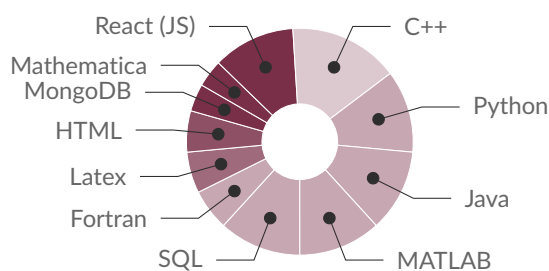
## CO-CURRICULAR AND EXTRACURRICULAR ACTIVITIES

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- Served as a “Program Coordinator” at painting “World Longest Pi Approximation” on street of University campus organised by the Department of Applied Mathematics, University of Dhaka.
- Advise an online social media educational platform named "Shon4poth" (English: Locus) based on Mathematics and its application which has 12,000+ active followers and 50,000+ viewers.
- Volunteered at “21<sup>st</sup> International Mathematics Conference – 2019”.
- Life Member at Bangladesh Mathematical Society (BMS).
- Life Member at Dhaka University Mathematics Alumni Association (DUMAA).
- House Tutor at Shahid Sergeant Zahurul Huq Hall, University of Dhaka (July 2023 – Present).
- Attended at “20<sup>th</sup> International Mathematics Conference – 2017”.
- Organized “4th Year International Study Tour – India, Bhutan - 2019” as Team Leader.
- Served as a Class Representative (CR) in the first year.
- Organized events like Freshers’ Reception, Excursions etc.
- Team manager at Inter-Department Football Tournament 2018-19.

## PROGRAMMING SKILLS

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## ENGLISH LANGUAGE PROFICIENCY

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### English



Fluent in English but not a native speaker.

Can fluently speak, understand and write with ease.

TOEFL score: 93 (Reading – 29, Listening – 22, speaking – 21 and Writing – 21).

GRE score: 314 (Quantitative Reasoning – 167, Verbal Reasoning – 147).

## ACHIEVEMENTS AND AWARDS

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- Got Research and Development (R&D) Fellowship, 2023-2024.
- Got National Science and Technology Fellowship, 2021-2022.
- Got Dean's Award 2019, Faculty of Science, University of Dhaka, 2019.
- Got Government Undergraduate Scholarship, 2019.
- **Stood First at 10<sup>th</sup> National Undergraduate Mathematics Olympiad, 2018.**
- Champion player at Inter-Department Football Tournament 2017-18.
- Got Imdad-sitara Khan Undergraduate Scholarship, 2016.
- Champion at Notre Dame (National) Inter-college Chess Championship, 2015.
- Champion at Udvash National Chess Competition, 2015.
- Runner-Up at DRMC-SQUARE National Chess Competition, 2014.
- Got Government SSC Talentpool Scholarship, 2013.
- Got Government JSC Talentpool Scholarship, 2010.
- Got Government PSC Talentpool Scholarship, 2007.

## COURSES ACCOMPLISHED (ONLINE)

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### Platform: Coursera

- Specializations (Please click to verify)
  - Python for Everybody (5 Courses)
  - Object Oriented Programming in Java (4 Courses)
  - Java Programming and Software Engineering Fundamentals (5 Courses)
  - Google IT Support (5 Courses)
- Courses (Please click to verify)
  - Introduction to Data Science in Python
  - Python Data Structures
  - Using Databases with Python
  - Using Python to Access Web Data
  - Capstone: Retrieving, Processing, and Visualizing Data with Python (with Honors)
  - The Data Scientist's Toolbox
  - Operating Systems and You: Becoming a Power User
  - System Administration and IT Infrastructure Services
  - The Bits and Bytes of Computer Networking
  - Technical Support Fundamentals
  - IT Security: Defense against the digital dark arts
  - Programming Foundations with JavaScript, HTML and CSS (with Honors)
  - Java Programming: Build a Recommendation System
  - Object Oriented Programming in Java
  - Java Programming: Principles of Software Design
  - Data Structures and Performance
  - Java Programming: Solving Problems with Software (with Honors)
  - Java Programming: Arrays, Lists, and Structured Data
  - Cryptography and Information Theory
  - Symmetric Cryptography (with Honors)
- Complete Web Development – Platform: Programming Hero
- Developed websites (live projects) and applications with various programming languages included in github.