



# AHMAD AL ASAD

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## INTRODUCTION

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I am enthusiastic about solving puzzles and experimenting with different problems. My strengths include programming using python and java. I am interested in researching in the field of learning algorithms. I am particularly interested in data-driven analysis and decision-making through the use of learning models. I plan to work on addressing real-world problems by discovering links and patterns in data and acting on the trends. I aim to conduct more data-driven research while continuing my studies for a Master's degree and eventually a Doctorate.

## EDUCATION

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### BACHELOR OF SCIENCE: Computer Science and Engineering

Brac University | Dhaka, Bangladesh | 2022

- CGPA: 3.94 (Scale of 4.00)
- Thesis: "Predicting Peak Performance of a Cricket Player Using Machine Learning and Data Analytics"
- Published two articles from the thesis research
- Worked 15 hours a week as a Student Tutor
- Included in the Dean's List for Spring 2022 semester and in the Vice Chancellor's List for Spring 2019, 2020, 2021, Summer 2020, 2021, 2022, Fall 2019, 2020, 2021 semesters
- Received Scholarship based on previous Academic Results for five semesters
- Received Merit Scholarship based on BracU Academic Results for six semesters

### EDEXCEL IAL:

Maple Leaf International School | Dhaka, Bangladesh | 2018

- 4A Grades (3A\*)
- Graduated 4<sup>th</sup> in the class of 2018

### EDEXCEL INTERNATIONAL GCSE:

Maple Leaf International School | Dhaka, Bangladesh | 2016

- 8A Grades (8A\*)
- Scored World Highest in Further Pure Mathematics
- Scored World Highest in Mathematics A

## RESEARCH EXPERIENCE

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### UNDERGRADUATE THESIS | 2021 - 2022

- Examined the performance of a cricket player with respect to various external factors
- Collected match statistics data from before, during and after the game

- Conducted a detailed analysis of the ball-by-ball commentary during the game
- Constructed a formula for control and generated a new parameter called Impact
- Critiqued the post-game commentary from match statistics to determine new features
- Compiled all the features to create a corpus dataset
- Implemented machine learning algorithms to predict the impact
- Presented two articles in conferences

#### PROJECT FOR APPLIED DATA SCIENCE COURSE | 2022

- Reviewed the possibility of Parkinson's Disease from voice measurements
- Tested the biomedical voice measurements from a UCI machine learning repository dataset
- Worked with classification algorithms such as kNN, Logistic Regression, SVM Classifier, Decision Tree, Random Forest and XGBoost Classifier
- Examined the trained models focusing on False Negatives
- Evaluated the performance of the trained models based on the lowest false negatives

## TEACHING EXPERIENCE

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#### LECTURER [CONTRACTUAL]

Department of Computer Science and Engineering, Brac University | 2023 – Present

- Courses Tutored: Programming Language I Lab, Data Structures Lab, Computer Networks Lab
- Provided lectures on the basics of programming and data structures
- Coached students in building complete network infrastructure projects
- Developed project topics and evaluated students' understanding of networks
- Enabled greater studying environment by encouraging more hands-on practical experience
- Coordinated between hardware and software simulations for more informed learning

#### STUDENT TUTOR

Department of Computer Science and Engineering, Brac University | 2021 – 2022

- Courses Tutored: Programming Language I, Programming Language II, Data Structures, Algorithms
- Guided students to understand course materials better; Conducted tutorial classes
- Evaluated quizzes and assignments; Assisted lab instructors
- Developed strategies to improve student engagement; Set goals to facilitate learning

## TECHNICAL SKILLS

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|------------------------------------|--------------------------------------|
| • Corpus Data Collection           | • Learning Algorithms and Models     |
| • Data Visualization and Analytics | • Python, Java, HTML, PHP, CSS       |
| • LaTeX, Spreadsheet               | • Critical Thinking, Problem Solving |

## PUBLICATIONS

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#### CONFERENCE:

1. **A. A. Asad**, T. Ashraf, I. Z. Chowdhury, A. Azam, K. N. Anwar, M. G. R. Alam & T. Rahman, "Measuring Control of a Bowler to Predict Impact in ODI Cricket Using Classification Models," 2022 7th International Conference on Intelligent Informatics and Biomedical Science (ICIIBMS), 2022, pp. 329-334, doi: [10.1109/ICIIBMS55689.2022.9971630](https://doi.org/10.1109/ICIIBMS55689.2022.9971630). [Best Paper Award Winner]
2. **A. A. Asad**, K. N. Anwar, I. Z. Chowdhury, A. Azam, T. Ashraf and T. Rahman, "Impact of a Batter in ODI Cricket Implementing Regression Models from Match Commentary," 2022 IEEE Asia-Pacific Conference

## PROJECTS AND RESEARCHES

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1. **Predicting Peak Performance of a Cricket Player Using Machine Learning and Data Analytics** | Undergraduate Thesis, 2021 – 2022
  - Analyzed commentary from match statistics and formulated new parameters to generate corpus dataset; Implemented regression and classification algorithms and compared performance
  - Corpus dataset: <https://tinyurl.com/odi-batter-dataset>; <https://tinyurl.com/odi-bowler-dataset>;
2. **Prediction of Parkinson's Disease from Voice Measurements using Machine Learning Classification Algorithms** | 2022
  - Used voice signals dataset from UCI machine learning repository and implemented machine learning to make models for detecting Parkinson's disease; Model performance was based on having low false negatives from the confusion matrix
  - Preprint: <http://dx.doi.org/10.13140/RG.2.2.13053.33765/1>
3. **Tele Net App Service** | 2022
  - Networking system using six intermediary devices as branches and end devices; IP assignment using VLSM based on host requirement; Simulated using Cisco Packet Tracer
  - Source: <https://github.com/ExGranite/tele-net-app-service>
4. **Art Gallery Management** | 2022
  - System analysis and design using use case diagram, activity diagram, sequence diagram, data flow diagram and windows navigation diagram
  - Source: <https://github.com/ExGranite/ArtGalleryManagement>
5. **Smart Trash Can** | 2022
  - Smart trash can system using HC-SR04 ultrasonic sensor, active infrared obstacle sensor and Arduino Uno R3; ultrasonic sensor determines the amount of available space inside and the infrared sensor automates the opening of the trash can; Simulated using Proteus and LabVIEW
  - Source: <https://github.com/ExGranite/smart-trash-can>
6. **Data Logger** | 2022
  - Data logger system using DHT11 and Arduino Uno R3; DHT11 reads the temperature and humidity readings and gives a visual representation; Simulated using Proteus and LabVIEW
  - Source: <https://github.com/ExGranite/data-logger>
7. **Online Food Ordering System** | 2021
  - A software engineering project based on Laravel 8; Languages: php, html, css, javascript
  - Source: <https://github.com/ExGranite/OnlineFoodOrderingSystem>
8. **Line Follower Robot** | 2021
  - PID implemented line following robot using infrared sensor to read a black line and follow it; Simulated using Webots from Cyberbotics; Language: python
  - Source: <https://github.com/ExGranite/line-follower>
9. **Obstacle Avoiding Robot** | 2021
  - Obstacle avoiding and object detection robot using distance sensors and camera sensors; Simulated using Webots from cyberbotics; Language: python
  - Source: <https://github.com/ExGranite/obstacle-avoiding>

## CERTIFICATES AND VOLUNTEER EXPERIENCE

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1. Best Paper Award Winner, awarded by ICIBMS 2022

- Awarded for an article titled "Measuring Control of a Bowler to Predict Impact in ODI Cricket Using Classification Models"
2. Director of Finance in Brac University Chess Club, 2021
    - Served as a Director of Finance in Brac University Chess Club for 1 year after being promoted from an Executive
  3. Executive of Training in Brac University Chess Club, 2020
    - Served as an Executive of Training and Research in Brac University Chess Club for 1 year
  4. Certificate of High Achievement by EDEXCEL, 2018
    - Awarded for 4'A' Grades (3A\*) in IAL, 2018
  5. Participated in the Regional Round of 8<sup>th</sup> Bangladesh Physics Olympiad, 2018
  6. Participated in the Preliminary Round of 8<sup>th</sup> Bangladesh Chemistry Olympiad, 2017
  7. Volunteered for Hunger Action 2017 by Durnibar Foundation, 2017
    - Contributed towards lending a helping hand to end childhood hunger in Bangladesh
  8. Participated in Inspire Meetup 2.0 by Durnibar Foundation, 2017
    - It is an open platform discussion on youth activism organized by Durnibar Foundation
  9. Certificate of High Achievement by EDEXCEL, 2016
    - Awarded or 8'A' Grades (8A\*) in International GCSE, 2016
    - Awarded for obtaining World Highest in International GCSE (Further Pure Mathematics and Mathematics A), 2016