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## Education

### Brac University

Bangladesh

*Bachelor of Science in Computer Science and Engineering*

2017 – 2021

- CGPA: 3.87/4.0
- Undergraduate Thesis : Facial Expression Recognition: Convolutional Attentional Masking Network and Ensemble Approach  
Supervisor: Md. Hasanul Kabir, PhD. Co-Supervisor: Rasif Ajwad

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## Experience

### Undergraduate Teaching Assistant

Jan'20 – May'21

*Programming Language I (Structured Programming) & II (Object Oriented Programming)*

Java, Python

- Attended Lab Classes and assisted the Faculty Members to conduct the Classes.
- Provided 15 Hours / Week as Consultation Hours for Students and assisted them with Problem Solving and Exam Preparation.
- Conducted in-person, online and instant tutor appointment options to accommodate student schedule.

### Machine Learning Engineer

July'21 – Present

*Apurba Technology Ltd.*

- Currently working on Bengali OCR recognition using Computer Vision
- Conducted research on document layout analysis on different languages

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## Research (papers linked)

### An Algorithmic Approach to Driver Drowsiness Detection in an Autonomous Car

*with Prof Md Motaharul Islam*

UIU, Bangladesh

- Detecting drowsiness using python OpenCV and shifting to autonomous
- Published in IEEE Region 10 Symposium, 2020  
\* DOI: 10.1109/TENSYP50017.2020.9230766

### A Novel Approach to Enhance Safety on Drowsy Driving in Self-Driving Car

*with Prof Md Motaharul Islam*

UIU, Bangladesh

- Submitted to Springer MONET & currently working on revised manuscript
- Collected data on drowsy driving and analysed them to detect drowsiness and turn on autonomous mode to reach to a safe parking space if the driver is drowsy.

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## Projects

### Facial Expression Recognition | CNN, State-of-the-art

- Proposed a state-of-the-art Convolutional Attentional MaskingNetwork and Ensemble Network
- Obtained 76.12% accuracy on detecting FER

### Driver Drowsiness Detection and Alarming System | Python, Opencv,ML

- Real-Time driver observation using OpenCV & python API
- State-of-the-art approach to handle post-alarm condition on autonomous vehicle
- The system can book a local parking space and reach there if the driver is sleepy

### Simobot: Simulation for Evolutionary Robotics | AI, Robotics

- a reddit-based Massively Open Online Course (MOOC) for creating and training simulated robots by Professor Josh Bongard

- Learned how to build and evolve simulated robots to perform a variety of tasks using AI learning algorithms

#### **An efficient Metaheuristic Approach for Finding Motifs from DNA Sequences** | *Python, ML*

- Created an algorithm that can find DNA motif using heuristic approach
- Learned various core heuristic approach and analysed how they affect the population

#### **Hybrid Key Generation for Blockchain Wallet** | *Blockchain, Python*

- Created hybrid key using RSA & ECDSA to make a transaction from wallet

#### **Virtual Library Management System** | *HTML, CSS, PHP, MySQL*

- Designed System Analysis
- Made user and admin panels with HTML and CSS.
- Connected to Database which is made with PHP and MySQL

#### **Bangla Name Generator** | *open source, serverless function, python*

- Developed an API system that can suggest Bengali name depending on gender
- Used serverless function from vercel to launch the the system

#### **Citrus Leaf Disease Detection** | *Python, CNN*

- Working for state-of-the-art result on detecting Citrus leaves disease

### Extracurriculars

#### **Brac University Computer Club**

Jan 2019 - December 2019

*Creative Department*

*Executive*

- Made posters for social media and Contributed to different clubbing events
- Assigned tasks to juniors depending on their knowledge capability

### Certificates & Awards

#### **Merit Scholarship Award, Brac University**

Sept 2018 - May 2021

- 10% waiver on Tuition Fees on every semester.

#### **VC's List and Dean's List Award, Brac University**

- Got placed on VC's List for 5 semesters as recognition of achieving a GPA of 3.90-4.00 on those particular semesters.
- Got placed on Dean's List for 3 semesters as recognition of achieving a GPA of 3.70-3.89 on those particular semesters.

#### **Presentation Skill, Brac University**

Sept 2017 - Nov 2017

- As an activity at Residential Campus, Brac University
- Learned how to solve case studies and presented them to the panel members

### Skills

**Languages:** Java, Python, C/C++ (basic), SQL, JavaScript(basic), HTML/CSS(basic)

**Human Languages:** Bangla, English, Hindi, German(basic), French(basic)

**Developer Tools:** Jupyter Notebooks, Git, Keras, Tensorboard, Pytorch, Tensorflow, Docker Google Cloud Platform, VS Code

### Reference

#### **Md. Motaharul Islam, PhD**

Professor, Department of Computer Science & Engineering

United International University

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