

# SHOAIB AHMED DIPU

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## RESEARCH INTEREST

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Computer Vision, Trustworthy Machine Learning, Active Learning and Human-in-the-Loop Machine Learning, Natural Language Processing

## EDUCATION

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### Bachelor of Science in Computer Science and Engineering

January 2017 - December 2020

Brac University, Dhaka, Bangladesh

CGPA : 3.91 / 4.00

## RESEARCH

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### Undergraduate Thesis

- An Active-Learning based Training-Schedule for Biomedical Image Segmentation on Deep Neural Networks.

[Link]

Spring 2020 - Fall 2020

Supervisors: [Dr. Mahbubul Alam Majumdar](#), [Sowmitra Das](#), [Shahnewaz Ahmed](#)

### Journal Publication

- Azim, R., Wang, S., & Dipu, S. A. (2022). CDSImpute: An Ensemble Similarity Imputation method for single-cell RNA sequence dropouts. Computers in Biology and Medicine, 146, 105658. [IF : 7.7] [Link]
- Azim, R., Wang, S., Dipu, S. A., Islam, N., Muid, M. R. A., Elahe, M. F., & Li, M. (2023). A patient-specific functional module and path identification technique from RNA-seq data. Computers in Biology and Medicine, 158, 106871. [IF : 7.7] [Link]

### Conference Publication

- Karim, D. Z., Bushra, T. A., Dipu, S. A., Mehedi, M. H. K., & Rasel, A. A. (2023). A Deep Learning Based Ensemble Approach for Gastrointestinal Disease Detection with XAI. ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2023). [Accepted to be presented during 4-7 December, 2023]

### Ongoing Work

- FetalSIFT-CNN : Convolutional Networks for Fetal Brain Plane Classification Enriched by SIFT and Enlightened Through Grad-CAM-based Explainability. (2023). Collaborators : A. M. Tayeful Islam, Md Abu Ibrahim, [Dr. Md Golam Rabiul Alam](#)

### Supervision

- Exploration and Mitigation of Gender Bias in Word Embeddings from Transformer-based Language Models.

(2023). Co-supervised Undergraduate Thesis with [Dr. Farig Yousuf Sadeque](#)

Students : Ariyan Hossain, Rakinul Haque, Mohammad Ahanaf Hannan, Nowreen Tarannum Rafa, Humayra Musarrat

## APPOINTMENT

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### Lecturer

June 2022 - Present

Department of Computer Science and Engineering, Brac University

Dhaka, Bangladesh

- Courses Currently Teaching : Object Oriented Programming, Algorithms, Database Systems

### Lecturer

May 2021 - May 2022

Department of Computer Science and Engineering, Northern University Bangladesh

Dhaka, Bangladesh

- Courses Taught : Object Oriented Programming, Theory of Computation, Compiler Design, Introduction to Computer, Web Programming, Database Programming

### Student Tutor (Undergraduate Teaching Assistant)

September 2019 - December 2020

Department of Computer Science and Engineering, Brac University

Dhaka, Bangladesh

- Courses Taught : Structured Programming, Object Oriented Programming

### Student Tutor (Undergraduate Teaching Assistant)

July 2020 - September 2020

Department of Mathematics and Natural Sciences, Brac University

Dhaka, Bangladesh

- Course Assisted : Linear Algebra and Fourier Analysis

### Student Mentor of First Year Advising Team (FYAT)

January 2019 - December 2019

Office of Academic Advising, Brac University

Dhaka, Bangladesh

## TECHNICAL SKILLS

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**Programming Languages:** Java, Python, C/C++, R

**Other Languages:** MATLAB, Mathematica,  $\text{\LaTeX}$ , x86 Assembly, Bash, Verilog

**Web Programming:** PHP, MySQL, HTML5, CSS

**Library:** TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, JOGL

**Software & Tool:** Git, Altera Quartus, Microwind, PSpice, emu8086

## HONOR & AWARD

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- Completed Bachelor's with **Highest Distinction** (Awarded to candidates whose CGPA is 3.80 or higher)
- Got placed on **Vice Chancellor's List for 6 times** during Bachelor's (Awarded as recognition of achieving a GPA of 3.90-4.00 on a particular semester)
- Got placed on **Dean's List for 5 times** times during Bachelor's (Awarded as recognition of achieving a GPA of 3.70-3.89 on a particular semester)
- **Special Recognition Award** (Vice Chancellor's Certificate) for Residential Semester (Top **4.4%**. Awarded as recognition of high standard of Discipline and Devotion during Residential Semester)
- Merit Based Scholarship (**70% waiver on Tuition Fees** in every semester)

## ACADEMIC PROJECT

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- Automation on Agriculture Field by Creating Mesh Network using esp8086 (Microprocessors) [\[Link\]](#)
- Employee Management & Performance Tracker System (Database Systems) [\[Link\]](#)
- Automated Restaurant Management System (Software Engineering [\[Link\]](#) & System Analysis & Design [\[Link\]](#))
- Maze Solver & Android based Bluetooth Controlled Robot (Digital System Design) [\[Link\]](#)

## SERVICE

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- **Lab Course Coordinator** [Summer 2022, Fall 2022, Spring 2023, Summer 2023, Fall 2023], Brac University. (Coordinated with the Lab Faculty Members of 10-13 different sections & approximately 400 students to conduct the Lab Course of those particular semesters)
- **Pre Thesis II Panel Judge** [Summer 2022, Fall 2022, Spring 2023], Brac University. (Evaluated & provided feedback to the Posters & Presentations of the Undergraduate Thesis groups)
- **Final Thesis Defense Panel Judge** [Summer 2023], Brac University. (Evaluated & provided feedback to the research works of Undergraduate Thesis groups)
- **Final Project & Thesis Defense Panel Judge** [Summer 2021, Fall 2021, Spring 2022], Northern University Bangladesh. (Evaluated & provided feedback to the research works of Undergraduate Project & Thesis groups)
- **Academic Advisor of Probationary Students** [Spring 2023, Summer 2023], Brac University. (Consulted and advised undergraduate students who are on academic probation)
- **Academic Advisor of Fresher Students** [Fall 2023], Brac University. (Consulted and advised undergraduate students who are on their first semester)
- **Organizing & Hosting Webinars** [2021], Northern University Bangladesh. (Invited guests both from Academia & Industry to share their journey & experience with the Undergraduate students) [\[Link\]](#)

## MISCELLANEOUS

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- Champions of Earth : Season I, North South University. **Top 2.7%**. Participated in an Environmental based Idea Generation Competition. Around 296 teams participated in first round & 8 teams made it to Grand Finale. [\[Link\]](#)
- Contributed Talk : Short Introduction to Neural Networks & Deep Learning, Brac University. [\[Link\]](#)

## REFERENCE

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Available on request.