

# Ahmed Azaz Humdoon

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## About Me

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I am an aspiring researcher passionate about making contributions that further advance the disciplines of machine learning and natural language processing. My research interests include different aspects of NLP such as Large Language Models, Natural Language Generation, Automatic Summarization and QA, and Clinical NLP. My aim is to advance techniques that produce explainable, fair, and ethical NLP systems. In general, I am enthusiastic about harnessing the power of AI to solve real-world problems and improve human lives.

## EDUCATION

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<b>Islamic University of Technology</b> <i>Bachelor of Science in Computer Science and Engineering</i> <ul style="list-style-type: none"><li>CGPA : 3.58/4.00</li></ul>	Dhaka, Bangladesh. <i>Jan. 2018 – May. 2022</i>
<b>Notre Dame College</b> <i>Higher Secondary Certificate</i> <ul style="list-style-type: none"><li>GPA : 5.00</li></ul>	Dhaka, Bangladesh. <i>2015 – 2017</i>
<b>Dhaka Residential Model College</b> <i>Secondary School Certificate</i> <ul style="list-style-type: none"><li>GPA : 5.00</li></ul>	Dhaka, Bangladesh. <i>2013 – 2015</i>

## RESEARCH EXPERIENCE (Undergraduate Thesis)

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### Semi-Automated Approach to Generate Bangla Dataset for QA & Query-Based Text Summarization

- We provide 3 datasets that tackle three tasks in QA and QBSUM domain.
- Primarily worked with Google NQ dataset.
- We incorporate a semi-supervised approach to annotate data in a semi-automatic manner.
- We introduce HITL (Human-in-the-loop) to ensure the high quality of the dataset.

## RESEARCH GRANT

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### TITLE : Semi-Automated Approach to Generate Bangla Dataset for QA & Query-Based Text Summarization

- Received funding from UIU Institute for Advanced Research (IAR)
- Grant Reference : UIU-IAR-02-2022-SE-07
- Received as : Co-Investigator
- Grant Amount : BDT 489,000.00

## INDUSTRY EXPERIENCE

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<b>Software Development Engineer</b> <i>IQVIA Ltd</i>	July 2023 – Present
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- Delivered impactful user features on time for multiple applications, prioritizing best engineering practices for optimal performance and maintainability.
- Assisted in building reusable code and libraries for future use.
- Enhanced the stability and reliability of multiple apps by significantly expanding test coverage.

<b>Assistant Software Engineer</b> <i>Millennium Information Solution Ltd</i>	January 2023 – June 2023
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- Developed RESTful APIs to manage authentication, account information, billing and financial transactions of DESCO (Dhaka Electric Supply Company).

- Contributed to developing the official documentation website of the company using Docusaurus which gives full details about the technological architecture of how the softwares are made.
- Gained knowledge about microservice architecture and CQRS design pattern.

## Intern

March. 2021 – October. 2021

### *Business Automation*

- Worked on developing one in-house information management & analysis system application using Flutter.
- Learned Clean Code, practiced Object Oriented Design SOLID principles and implemented different Design Patterns such as Factory, Singleton, State, Prototype pattern in Java.

## Technical Skills

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

**Deep Learning Frameworks & Libraries:** PyTorch, Tensorflow, Keras, Scikit-Learn, NumPy, Pandas, NLTK.

**Web Development:** HTML, CSS, JavaScript, TypeScript, Angular.

**Database Management & Other Tools:** MySQL, PostgreSQL, Git, LaTeX, Hugging Face, Jira.

## Selected Projects

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### Chess Game | *C++*, *graphics.h library* |

- A classic two player chess game that ends when a player is first checkmated.
- graphics.h library was used for creating the interface.
- Users can play it using mouse and keyboard.
- The game is continued till one of the player doesn't play more than 50 moves.

### Text Summarization with BART and T5 | *Python*, *Tensorflow* |

- Deep Learning project for text summarization using BART and T5 from Hugging Face Transformers library.

### Offensive language identification from tweets using BERT | *Python*, *Tensorflow* |

- Natural Language Processing (NLP) application on determining whether a social media tweet/post is offensive or not.

### Book Store Web Application | *C#*, *ASP.NET Core MVC*, *MySQL*, *CSS* |

- Books of different categories can be added. Added books can be edited and deleted as well.
- Validation is added so that empty items can't be added in the list and values beyond range can't be given.
- Bootstrap is used in the theme of the application and for adding icons to make the site more user friendly.
- TMySQL server is used as the database and Toastr.js is used to make readable notifications when an item is created, edited or deleted.

### Tumor Extraction Using Image Processing | *MATLAB* |

- Detection and extraction of brain tumor from patient's MRI scan images of the brain.
- The method incorporated some noise removal functions, segmentation and morphological operations.
- Four morphological techniques such as butterworth high and low pass filter, median filter and threshold segmentation were used to detect tumor from the MRI scan images.

## Certifications

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**Deep Learning Specialization** | *by Deeplearning.ai [Verify]*

Dec 1, 2020

## Extracurricular Activities

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### IUT Computer Society, Event Management Team

10<sup>th</sup> IUT ICT FEST - 2019

- Involved in management of event scheduling and team registration for different programs of the fest.
- Volunteer for the Application Development hackathon event .

### IUT Mars Rover Team, Autonomous and Communication System

*European Rover Challenge - 2020*

- The team achieved 19th position in the competition and 2nd position among all Bangladeshi teams.

## REFERENCES

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**Dr. Md Kamrul Hasan**

Professor, CSE Department

Islamic University of Technology

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**Dr. Hasan Mahmud**

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