



# Md. Akram Hossain

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 Google Scholar  Website

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**Research Interests** Multimodal AI, Causal Inference, Multilingual and Low-resource NLP, Information Extraction, Lexical Semantics, Natural Language Processing.

**Education** *B.Sc. (Engg.) in Computer Science and Engineering* 2023  
**University of Chittagong**, Chattogram, Bangladesh  
CGPA: 3.50 out of 4.0 (last 2-years GPA 3.76)  
Thesis: Named Entity Recognition from Financial Text Using Graph Neural Network.  
Advisor: Dr. Abu Nowshed Chy

**Research Experience** Research Assistant at [CSECU-DSG Lab](#), University of Chittagong, Bangladesh;  
Advisor: [Dr. Abu Nowshed Chy](#)  
Timeline: March 2020 - Present  
Research Collaboration with [KDE Lab](#), Toyohashi University of Technology, Japan;  
Advisor: [Dr. Masaki Aono](#)  
Timeline: Jan 2021 – Dec 2023  
Research Collaboration with [Md Zia Ullah’s Lab](#), Edinburgh Napier University, UK;  
Advisor: [Dr. Md Zia Ullah](#)  
Timeline: Jan 2021 – Present

**Honors and Awards** **University of Chittagong:**  
– 1st Place - CheckThat!@CLEF-2023 Subtask 1A Arabic **Aug, 2023**  
– 1st Place - CASE@EMNLP-2022 Subtask 1 **Dec, 2022**  
– 1st Place - CEREX@FIRE2020 Task A **Dec, 2020**  
– 1st Place - Intra-departmental programming contest **Sep, 2019**  
– 2nd Place - ALTA-2022 Shared Task **Dec, 2022**  
– 4th Place - PreTENS@SemEval-2022 Subtask 1 **Jul, 2022**

**Publications** **International Journals:**  
1. **Md. Akram Hossain\*** Abdul Aziz\*, Abu Nowshed Chy, Md Zia Ullah, and Masaki Aono. *Leveraging Contextual Representations with BiLSTM-based Regressor for Lexical Complexity Prediction*, Natural Language Processing Journal, Vol. 5, December 2023. ([PDF](#)) [\* equal contribution]

**Conference and Workshop Papers:** [\* equal contribution]

1. Nabila Ayman Nishat, **Md. Akram Hossain\***, Abdul Aziz\*, Rokan Uddin Faruqui, Abu Nowshed Chy. *BengaliLCP: A Dataset for Lexical Complexity Prediction in the Bengali Texts* (Long Paper), LREC-COLING 2024. (**Accepted**)
2. **Md. Akram Hossain**, Muhammad Anwarul Azim, Abu Nowshed Chy, Mohammad Khairul Islam, Md Zia Ullah, and Abdul Aziz. *BiGCAT: An Integrated Graph Neural Network Model for Financial Named Entity Recognition* (Long Paper), (In Progress).

3. Abdul Aziz, **Md. Akram Hossain**, Abu Nowshed Chy, and, Md Zia Ullah. *Multimodal Complaint Detection Using Sentiment and Emotion-Aided Multitask Contrastive Learning Model* (Long Paper), (Submitted).
4. Abdul Aziz, **Md. Akram Hossain**, Abu Nowshed Chy, and, Md Zia Ullah. *Sentiment and Emotion Analysis Using Transformer-based Multi-task Contrastive Learning Model on Code-mixed Tweets* (Short Paper), (In Progress).
5. **Md. Akram Hossain**, Abdul Aziz, Abu Nowshed Chy. *CSECU-DSG@ Causal News Corpus 2023: Leveraging RoBERTa and DeBERTa Transformer Model with Contrastive Learning for Causal Event Classification*, CASE@RANLP-2023. ([PDF](#))
6. Abdul Aziz, **Md. Akram Hossain**, Abu Nowshed Chy. *CSECU-DSG@ Multimodal Hate Speech Event Detection 2023: Transformer-based Multimodal Hierarchical Fusion Model For Multimodal Hate Speech Detection*, CASE@RANLP-2023. ([PDF](#))
7. Abdul Aziz, **Md. Akram Hossain**, Abu Nowshed Chy. *CSECU-DSG at Check-That! 2023: Transformer-based Fusion Approach for Multimodal and Multi-genre Check-Worthiness*, CLEF 2023. ([PDF](#)) [**1<sup>st</sup> Place**]
8. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *CSECU-DSG at SemEval-2023 Task 4: Fine-tuning DeBERTa Transformer Model with Cross-fold Training and Multi-sample Dropout for Human Values Identification*, SemEval-2023. ([PDF](#))
9. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *CSECU-DSG @ Causal News Corpus 2022: Fusion of RoBERTa Transformers Variants for Causal Event Classification*, CASE@EMNLP-2022. ([PDF](#)) [**1<sup>st</sup> Place**]
10. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *Enhancing the DeBERTa Transformers Model for Classifying Sentences from Biomedical Abstracts*, ALTA-2022. ([PDF](#)) [**2<sup>nd</sup> Place**]
11. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *CSECU-DSG at SemEval-2022 Task 3: Investigating the Taxonomic Relationship Between Two Arguments using Fusion of Multilingual Transformer Models*, SemEval-2022. ([PDF](#)) [**4<sup>th</sup> Place**]
12. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *CSECU-DSG at SemEval-2022 Task 11: Identifying the Multilingual Complex Named Entity in Text Using Stacked Embeddings and Transformer based Approach*, SemEval-2022. ([PDF](#))
13. **Md. Akram Hossain\***, Abdul Aziz\*, Abu Nowshed Chy. *CSECU-DSG at SemEval-2021 Task 1: Fusion of Transformer Models for Lexical Complexity Prediction*, SemEval-2021. ([PDF](#))
14. **Md. Akram Hossain\***, Abdul Aziz\*, Afrin Sultana\*, Nabila Ayman\*, Abu Nowshed Chy., *Feature Fusion with Hand-crafted and Transfer Learning Embeddings for Cause-Effect Relation Extraction*, CEREX@FIRE 2020. ([PDF](#)) [**1<sup>st</sup> Place**]

## Selected Research Projects

### Information Extraction [June 2020 - Present]

- Event Causality Identification [CASE@RANLP '23, CASE@EMNLP '22]
- Cause-Effect Relation Extraction [CEREX@FIRE '20]
- Financial Named Entity Recognition using GNN (In Progress)

### Multimodal Information Processing [January 2022 - Present]

- Multimodal Complaint Detection (Submitted)
- Multimodal Hate Speech Detection [CASE@RANLP '23]
- Multimodal and Multigenre Check-Worthiness [CheckThat! @ CLEF '23]

### Multilingual and Code-mixed Task Understanding [December 2020 - Present]

- Code-mixed Sentiment and Emotion Analysis (In Progress)
- Multilingual Taxonomic Relationship of Arguments [SemEval '22]
- Multilingual and Code-mixed Complex NER [SemEval '22]

### Lexical Simplification [December 2020 - Present]

- Multilingual Lexical complexity Prediction [LREC-COLING '24] (Accepted)
- Lexical Complexity Prediction [Elsevier NLP Journal '23 , SemEval '21]

## Selected Software/Web Projects

### Online Hospital Management System [January - Aug 2022]

- A project of Mobile App Development Lab course (CSE 618)
- Role: Project Manager
- Implemented: Online Payment Gateway, Plot Generation from Data
- Github Repo: <https://github.com/Akram1871/HospitalManagementSystems.git>

### Dragon Flight Game [Feb 2024 - Present]

- Designed and developed an augmented reality (AR) game featuring flying dragons
- Implementing gameplay mechanics for destroying augmented objects to earn points
- Github Repo: <https://github.com/Akram1871/AR-Projects.git>

## Conference Presentation

**Md. Akram Hossain.** Enhancing the DeBERTa Transformers Model for Classifying Sentences from Biomedical Abstracts. Australian Language Technology Association, Flinders University, Adelaide, December, 2022 ([Virtual Mode](#)).

**Md. Akram Hossain.** Feature Fusion with Hand-crafted and Transfer Learning Embeddings for Cause-Effect Relation Extraction. Forum for Information Retrieval Evaluation, Hyderabad, December, 2020 ([Virtual Mode](#)).

## Selected Online Education

### Coursera Course

Mathematics for Machine Learning Specialization  
Deep Learning Specialization  
Python Basics

### Institution/Provider

Imperial College London  
deeplearning.ai  
University of Michigan

### Date Completed

currently taking  
09/2020  
07/2020

## Languages and Skills

**Human languages:** Bengali, English (**IELTS Overall Band Score: 7**)

**Programming Languages:** Python, C, C++, Java, PHP

**Libraries & Frameworks:** PyTorch, PyTorch Geometric, Tensorflow, Keras, Hugging-face, Pandas, SpaCy, Jupyter, Scikit-Learn, Google Colab

**Web & Visualization:** Matplotlib, Gradio, LIME, HTML, CSS

**Data:** JSON, XML, SQL, MongoDB

**Extra  
Curricular  
Activities**

**Competitive Programming**

- Solved over 400 problems on several online judges (Codeforces, UVA, LightOJ, etc.)
- Github Repo: <https://github.com/Akram1871/Code-of-programming-contest.git>

**Teaching Assistant (Jan-July 2020)**

- Course: C programming language Lab (CSE 114)
- Organization: University of Chittagong
- Instructor: Dr. Abu Nowshed Chy

**Student Volunteer**

- The 44th International ACM SIGIR Conference (SIGIR-2021)
- Intra-departmental competitive programming contest (2022 and 2023)

**Reviewer**

- SemEval (2021-2023), ACL-IJCNLP\* 2023, NAACL\* 2024 [\* Sub-reviewer]