

Md. Arid HASAN

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205 Massey St., Fredericton, NB – E3B 2Z5

As an aspiring machine learning enthusiast, I am deeply interested in machine learning, deep learning, natural language processing (NLP), and computer vision aiming to innovate and revolutionize modern computing. I constantly seek opportunities to hone my skills in these fields, fueled by a relentless passion for learning and exploring new possibilities.

ACADEMIC EXPERTISE AND RESEARCH INTEREST

- > Natural Language Processing
- > Machine Learning
- > Sentiment Analysis
- > Computer Vision
- > Deep Learning
- > Information Retrieval

EDUCATION

September 2023 **Master of Computer Science**

Present UNIVERSITY OF NEW BRUNSWICK
New Brunswick, Canada
CGPA: 4.3 out of 4.3 (*ongoing*)

January 2015 **B.Sc. in Computer Science and Engineering**

January 2019 DAFFODIL INTERNATIONAL UNIVERSITY
Dhaka, Bangladesh
CGPA: 3.82 out of 4.00

WORK EXPERIENCE

September, 2023 **Graduate Research Assistant, SE+AI Lab, Faculty of Computer Science, UNIVERSITY OF NEW BRUNSWICK, Canada**

- Present**
- > Working with ML frameworks and toolkits in handling large-scale and complex data sets
 - > Working with GPU and Bash Scripts.
 - > Scraping raw data and creating datasets

Transformers Zero shot Few shot Finetuning LLMs Finetuning LLMs

September, 2023 **Graduate Teaching Assistant, Faculty of Computer Science, UNIVERSITY OF NEW BRUNSWICK, Canada**

- Present**
- > Preparing lectures and conducting tutorial classes
 - > Evaluating assignments, project reports
 - > Assisting students in their assignments and projects

Data Mining & Machine Learning Foundation of Artificial Intelligence

January 25, 2021 **Lecturer, Department of Computer Science and Engineering, DAFFODIL INTERNATIONAL UNIVERSITY, Bangladesh**

- June 30, 2023**
- > Conduct classes and prepare lectures
 - > Evaluate answer scripts
 - > Student advising
 - > Engage students in research work

Artificial Intelligence Data Mining & Machine Learning Programming and Problem Solving
Object Oriented Programming Digital Image Processing

June 1, 2021 **Research Programmer (Part-time), COGNITIVE INSIGHT LIMITED, Bangladesh**

- May 31, 2022**
- > Running deep learning experiments and writing paper
 - > Worked in both NLP and Multi-task learning for image processing
 - > Preprocessing and preparing data

Deep Learning Multi-task Learning Image Classification Natural Language Processing

August 01, 2018
January 31, 2021

Research Programmer, **COGNITIVE INSIGHT LIMITED**, Bangladesh

- Built Machine Learning models, run experiments, and investigated the outcomes.
- Developed various collaborative platform to collect data for Information Retrieval and Bangla Natural Language Processing using CodeIgniter and Laravel framework along with PHP, JQuery, HTML, Bootstrap, Vue.js, Node.js, MySQL, Apache and NginX Web Server.
- Developed various tools (i.e., corpus builder, web crawler) for collecting data (texts, images and videos) from social media, public blog, and Bangla Newspapers (more than 60 Newspapers) tool using Python and Scrapy.
- Developed web applications for data annotation and public uses of our research outcomes.

Apache Web Server NginX Web Server PhpStorm PyCharm PHP Python MySQL CodeIgniter
Laravel Bootstrap Vue.js Node.js JQuery

PUBLICATIONS

Journal Articles

- [1] F. Alam, T. Alam, **M. A. Hasan**, A. Hasnat, M. Imran, F. Ofli, *et al.*, “Medic: A multi-task learning dataset for disaster image classification,” *Neural Computing and Applications*, pp. 1–24, 2022.
- [2] F. Alam, **M. A. Hasan**, T. Alam, A. Khan, J. Tajrin, N. Khan, and S. A. Chowdhury, “A review of bangla natural language processing tasks and the utility of transformer models,” *ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)*, Submitted.

Book Chapters

- [1] F. Alam, K. Ahmed, **M. A. Hasan**, F. Ofli, and M. Imran, “Role of social media imagery in disaster informatics,” in *International Handbook of Disaster Research*, A. Singh, Ed. Singapore: Springer Nature Singapore, 2022, pp. 1–21, ISBN: 978-981-16-8800-3. DOI: [10 . 1007 / 978 – 981 – 16 – 8800 – 3 _ 170 – 1](https://doi.org/10.1007/978-981-16-8800-3_170-1). [Online]. Available: [https : //doi . org/10 . 1007/978-981-16-8800-3_170-1](https://doi.org/10.1007/978-981-16-8800-3_170-1).

Conference/Workshop Proceedings

- [1] **M. A. Hasan**, K. Dey, P. Tarannum, I. Razzak, and U. Naseem, “Do large language models speak all languages equally? a comparative study in low-resource settings,” in *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics*, 2024, Submitted.
- [2] **M. A. Hasan**, S. Das, A. Anjum, F. Alam, A. Anjum, A. Sarker, and S. R. H. Noori, “Zero- and few-shot prompting with llms: A comparative study with fine-tuned models for bangla sentiment analysis,” 2023. arXiv: **2308 . 10783 [cs . CL]**.
- [3] **M. A. Hasan**, F. Alam, A. Anjum, S. Das, and A. Anjum, “Blp 2023 task 2: Sentiment analysis,” in *Proceedings of the 1st International Workshop on Bangla Language Processing (BLP-2023)*, Singapore: Association for Computational Linguistics, Dec. 2023.
- [4] R. Zamparelli, S. A. Chowdhury, D. Brunato, C. Chesi, F. Dell’Orletta, **M. A. Hasan**, and G. Venturi, “Semeval-2022 task3 (preTENS): Evaluating neural networks on presuppositional semantic knowledge,” in *The 16th International Workshop on Semantic Evaluation*, 2022.
- [5] **M. A. Hasan**, B. Roy, H. Cao, and F. Palma, “Building multi-class emotions dataset from commit messages: A comparison among classical, deep learning, and pre-trained language models for emotions prediction,” in *Proceedings of the Canadian Conference on Artificial Intelligence*, Canadian Artificial Intelligence Association (CAIAC), 2024, Submitted.
- [6] **M. A. Hasan**, J. Tajrin, S. A. Chowdhury, and F. Alam, “Sentiment classification in bangla textual content: A comparative study,” in *23rd International Conference on Computer and Information Technology (ICCIT)*, Dec. 2020, pp. 1–6.
- [7] **M. A. Hasan**, F. Alam, S. A. Chowdhury, and N. Khan, “Neural machine translation for the bangla-english language pair,” in *2019 22nd International Conference on Computer and Information Technology (ICCIT)*, IEEE, 2019, pp. 1–6.
- [8] **M. A. Hasan**, F. Alam, S. A. Chowdhury, and N. Khan, “Neural vs statistical machine translation: Revisiting for bangla-english language pair,” in *2019 International Conference on Bangla Speech and Language Processing (ICB-SLP)*, IEEE, Sep. 27, 2019, pp. 108–112.
- [9] P. Tarannum, **M. A. Hasan**, and K. Dey, “Z-index at blp-2023 task 2: A comparative study on sentiment analysis,” in *Proceedings of the 1st Workshop on Bangla Language Processing (BLP 2023)*, Singapore: Association for Computational Linguistics, Dec. 2023.

- [10] K. Dey, **M. A. Hasan**, P. Tarannum, and F. Palma, "Semantics squad at blp-2023 task 2: Sentiment analysis of bengali text with fine tuned transformer based models," in *Proceedings of the 1st Workshop on Bangla Language Processing (BLP 2023)*, Singapore: Association for Computational Linguistics, Dec. 2023.
- [11] K. Dey, P. Tarannum, **M. A. Hasan**, and F. Palma, "Semantics squad at blp-2023 task 1: Violence inciting bengali text detection with fine-tuned transformer-based models," in *Proceedings of the 1st Workshop on Bangla Language Processing (BLP 2023)*, Singapore: Association for Computational Linguistics, Dec. 2023.
- [12] P. Tarannum, **M. A. Hasan**, F. Alam, and S. R. H. Noori, "Z-index at checkthat! 2023: Unimodal and multimodal checkworthiness classification," 2023.
- [13] K. Dey, P. Tarannum, **M. A. Hasan**, and S. R. H. Noori, "Nn at checkthat! 2023: Subjectivity in news articles classification with transformer based models," 2023.
- [14] P. Tarannum, **M. A. Hasan**, F. Alam, and S. R. H. Noori, "Z-index at checkthat! lab 2022: Check-worthiness identification on tweet text," 2022. [Online]. Available: <http://ceur-ws.org/Vol-3180/paper-58.pdf>.
- [15] **M. A. Hasan**, F. Alam, and S. R. H. Noori, "A collaborative platform to collect data for developing machine translation systems," in *Proceedings of International Joint Conference on Computational Intelligence*, Springer, Dec. 2018, pp. 407–416.
- [16] I. Khan, K. Ahsan, **M. A. Hasan**, and A. Sattar, "Brain tumor analysis using deep neural network," in *2021 5th International Conference on Intelligent Computing and Control Systems (ICICCS)*, IEEE, 2021, pp. 1749–1754.
- [17] B. Majumdar, M. Rafiuzzaman Bhuiyan, **M. A. Hasan**, M. S. Islam, and S. R. H. Noori, "Multi class fake news detection using lstm approach," in *2021 10th International Conference on System Modeling & Advancement in Research Trends (SMART)*, IEEE, 2021, pp. 75–79.
- [18] S. S. Ashik, A. R. Apu, N. J. Marjana, M. S. Islam, and **M. A. Hassan**, "M82b at checkthat! 2021: Multiclass fake news detection using bilstm," pp. 435–445. [Online]. Available: <http://ceur-ws.org/Vol-2936/#paper-33>.
- [19] S. M. Sohan, S. A. Khusbu, M. S. Islam, and **M. A. Hasan**, "Blackops at checkthat! 2021: User profiles analyze of intelligent detection on fake tweets notebook for pan," pp. 648–658. [Online]. Available: <http://ceur-ws.org/Vol-2936/#paper-54>.
- [20] R. S. Utsha, M. Keya, **M. A. Hasan**, and M. S. Islam, "Qword at checkthat! 2021: An extreme gradient boosting approach for multiclass fake news detection," pp. 619–627. [Online]. Available: <http://ceur-ws.org/Vol-2936/#paper-51>.
- [21] A. A. M. Sardar, S. A. Salma, M. S. Islam, **M. A. Hasan**, and T. Bhuiyan, "Team sigmoid at checkthat!2021 task 3a: Multiclass fake news detection with machine learning," pp. 612–618. [Online]. Available: <http://ceur-ws.org/Vol-2936/#paper-50>.

SKILLS

ML and NLP Tools	Transformers, Pytorch, LM-Harness, LLMeBench, OpenNMT, Keras, NLTK
LLMs Explored	GPT-4, GPT-3.5, Gemini, Llama 2, Jais, Bloomz, FlanT5
Programming	Python, Java
Web Development	PHP, JavaScript
Framework (Back-end)	CodeIgniter, Laravel
Framework and Tools (Front-end)	Vue.js, JQuery, Bootstrap
Database	MySQL, SQLite, Microsoft SQL Server
Web Server	Apache Web Server, NginX Web Server
Operating System	OS X, Ubuntu, Debian
Others	Git, Docker, Anaconda, Jupyter Notebook, Shell Scripting, etc.

SCHOLARSHIP & AWARDS

October, 2023	SGS Travel Awards, School of Graduate Studies, University of New Brunswick
2023-2025	Graduate Academic Award (GAA) / Graduate Research Award (GRA), School of Graduate Studies, University of New Brunswick
2023-2025	Masters International Differential Tuition Scholarship/Waiver, School of Graduate Studies, University of New Brunswick
2021-2023	Research Award, From Division of Research, Daffodil International University.
2015-2018	Tuition Fees Waiver, Daffodil International University.

REVIEWER

- 2024 **Reviewer, 2024 ACL ROLLING REVIEWER (ARR),**
February Cycle
Conference
- 2023 **Reviewer, THE 2023 CONFERENCE ON EMPIRICAL METHODS IN NATURAL LANGUAGE PROCESSING,**
Reviewed three article
Conference
- 2022 **Reviewer, THE 2022 CONFERENCE ON EMPIRICAL METHODS IN NATURAL LANGUAGE PROCESSING,**
Reviewed one article
Conference
- 2022 **Reviewer, NEURIPS 2022 TRACK DATASETS AND BENCHMARKS, 2022 Conference on Neural Information Processing Systems**
Reviewed one article
Conference
- 2021 **Reviewer, MULTIMEDIA SYSTEMS, Springer Nature**
Reviewed a article titled "A systematic review of sentiment analysis using machine learning and deep learning approaches"
Journal

EXTRACURRICULAR ACTIVITY

- February 2024 **Co-organizer, ARAIEVAL SHARED TASK AT ARABICNLP, Propagandistic Techniques Detection in Unimodal and Multimodal Arabic Content**

Present
Codalab python
- August 2023 **Co-organizer, BLP-2023 TASK 2, Sentiment Analysis**
September 2023
Codalab python
- February 2023 **Talk on Artificial Intelligence in Natural Language Processing, 7TH BANGLADESH SCHOOL OF INTERNET GOVERNANCE, Dhaka, Bangladesh**
 - > Hands-on Sentiment Analysis to demonstrate AI in NLP.Pytorch Pandas
- September 2022 **Co-organizer, SEMEVAL-2022 TASK 3, PreTENS-Evaluating Neural Networks on Presuppositional Semantic Knowledge**

Codalab python
- January 2021 **Supervisor, DIU-NLP and Machine Learning Research Lab, DAFFODIL INTERNATIONAL UNIVERSITY, Dhaka, Bangladesh**
December 2022
 - > Supervising students in their research works.
- October 2019 **Trainer, MACHINE LEARNING BOOTCAMP, Daffodil International University, Dhaka, Bangladesh**
January 2020 **Gave lectures on classical machine learning algorithms and implement those algorithms**
Python PyTorch
- February 22, 2020 **Trainer, WORKSHOP ON TENSORFLOW, KERAS AND PYTORCH, Daffodil International University, Dhaka, Bangladesh**
- Showing the uses of PyTorch framework in ML technologies.
Python PyTorch
- April 2018 **Member, DIU-NLP and Machine Learning Research Lab, DAFFODIL INTERNATIONAL UNIVERSITY, Dhaka, Bangladesh**
December 2020
 - > Responsible for developing various Bangla NLP tools
 - > Trying to develop Neural Machine Translation System for Bangla languagePython Keras PyCharm
- August 2017 **Student Prefect, Department Computer Science and Engineering, DAFFODIL INTERNATIONAL UNIVERSITY, Dhaka, Bangladesh**
December 2017
 - > Assisted the teacher in lab and course project
 - > Courses Covered : Object Oriented Programming (JAVA programming language)Java SE MySQL NetBeans Eclipse

2023 Multiplatform Bangla Sentiment Analysis[GITHUB.COM/ARIDHASAN/MUBASE](https://github.com/ARIDHASAN/MUBASE)

The MUBASE dataset is a multiplatform dataset consisting of Tweets and Facebook posts, which are manually annotated with sentiment polarity. The annotation agreement of this manually annotated dataset shows an agreement score of 0.84, indicating a perfect agreement among the annotators.

[Dataset](#) [Transformers](#) [LLMs](#) [Pretrained LMs](#) [Instructions](#)**2022 MEDIC: a multi-task learning dataset for disaster image classification**[MEDIC RESOURCES](#)

The MEDIC is the largest multi-task learning disaster related dataset, which is an extended version of the crisis image benchmark dataset. It consists of data from several data sources such as CrisisMMD, data from AIDR, and Damage Multimodal Dataset (DMD). The dataset contains 71,198 images.

[Dataset](#) [ResNet](#) [VGG](#) [EfficientNet](#) [SqueezeNet](#) [DenseNet](#)**2021 Resources for Bangla Natural Language Processing (BanglaNLP)**[GITHUB.COM/BANGLANLP/BNLP-RESOURCES](https://github.com/BANGLANLP/BNLP-RESOURCES)

In our work A Review of Bangla Natural Language Processing Tasks and the Utility of Transformer Models, we provide a review of Bangla NLP tasks, resources, and tools available to the research community; we benchmark datasets collected from various platforms for nine NLP tasks using current state-of-the-art algorithms (i.e., transformer-based models). We provide comparative results for the studied NLP tasks by comparing monolingual vs. multilingual models of varying sizes. We report our results using both individual and consolidated datasets and provide data splits for future research. We reviewed a total of 108 papers and conducted 175 sets of experiments. Our results show promising performance using transformer-based models while highlighting the trade-off with computational costs. We hope that such a comprehensive survey will motivate the community to build on and further advance the research on Bangla NLP.

[Dataset](#) [Transformers](#) [BiLSTM](#) [LMs](#)**2017 - 2018 AmaderCAT**[GITHUB.COM/ARIDHASAN/DATA-COLLECTION-SYSTEM-FOR-MACHINE-TRANSLATION/](https://github.com/ARIDHASAN/DATA-COLLECTION-SYSTEM-FOR-MACHINE-TRANSLATION/)[DETAILS EXPLANATIONS](#)

The application AmaderCAT is the abbreviation of Amader Computer-assisted Translation. This application is developed for the purpose of building parallel corpus for Machine Translation system. The application contains a Translation Memory and a Glossary suggestions implementation that used for helping translators by providing TM and glossary suggestions. The application is collaborative and highly configurable for the translation task. It has the mechanism for crowd translation. You can use it as single user or a group/team. In future, we will add Machine Translation System in our application using Neural Network technologies.

[PHP](#) [Codeigniter](#) [Javascript](#) [jQuery](#) [Bootstrap](#) [MySQL](#) [Apache and NignX Web Server](#)
[PhpStrom](#)**2018 Single Channel Multi server Queue Simulation**[GITHUB.COM/ARIDHASAN/SINGLE-CHANNEL-MULTI-SERVER-QUEUE-SIMULATION](https://github.com/ARIDHASAN/SINGLE-CHANNEL-MULTI-SERVER-QUEUE-SIMULATION)

This was a course-work project of course titled **Simulation & Modeling**. The problem stated as "A Car wash company has many workers but it has only one way for entering a car. The Car will enter into the garage sequentially and if there is any worker is available then the car will take for washing. Otherwise customer have to wait til the availability of workers. Like Queue System."

[Python](#) [PyCharm](#)**2017 Simple Database Query Builder**[*THE LINK WILL UPDATED SOON](#)

- › The main motivation for this project was "Create a platform where everyone(even not technical person) can manage a database, e.g. database and table creation, data insert, search, update and delete".
- › Designed and developed a user interface where everyone can easily create database and table, and easily can manage the database.
- › Designed and developed a Command Line Interface(CLI) for writing raw queries.

[Java SE](#) [SQLite](#) [NetBeans](#)

PROFESSIONAL DEVELOPMENT

- June, 2022 Participated in training on **Outcome Based Education (OBE)**
DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH
- December 19, 2019 Participated in **International Workshop on Computer Vision and Application (IWCVA)**
SOUTHEAST UNIVERSITY
DHAKA, BANGLADESH
- November 22, 2019 Participated in **8th International Conference on. SMART**
- November 23, 2019 TEERTHANKER MAHAVEER UNIVERSITY
MORADABAD, INDIA
- February 14, 2019 Attended in **Launching Ekush & Ishara-Lipi: Datasets for Bangla NLP Research**
71 MILONAYOTON, DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH
- March 22, 2015 Participated in a **Seminar on Python Programming Language**
AUDITORIUM-52, DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH

REFERENCES

Will be available upon request.