

Umme Aymun Siddiqua

Chittagong, Bangladesh

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Research Interests

My research interests lie in the areas of natural language processing, social computing, multimodal opinion mining, and multilingual learning. Research topics that I worked on include detecting stance, hate speech, identify informative tweets in crisis events, memotion and sentiment analysis from social media content.

Education

Toyohashi University of Technology

M.ENG. IN COMPUTER SCIENCE AND ENGINEERING

- **Thesis:** “Stance Detection on Microblogs Using Syntactic Tree Kernels and Deep Neural Networks.”

Toyohashi, Japan

September 2019

International Islamic University Chittagong

B.SC. IN COMPUTER SCIENCE AND ENGINEERING

- **Thesis:** “Combining a Rule-based Classifier with Ensemble of Feature Sets and Machine Learning Techniques for Sentiment Analysis on Microblog.”

Chittagong, Bangladesh

August 2016

Work Experience

Asian University for Women

INSTRUCTOR IN COMPUTER SCIENCE

- Teach Courses, Assess Students' Works, Curriculum Development, and Evaluate Placement Tests.

Chittagong, Bangladesh

January 2020 –Present

TEACHING ASSISTANT IN HARVARD'S CS50 COURSE

- Conduct Lab Class, Problem Sets Discussion, and Assist Students.

COURSES TEACH

- Introduction to Computing and Programming
- Structured Programming Language C
- High-level Programming Language Python
- CS50's Introduction to Computer Science by Harvard University

Research Experience

Asian University for Women

MENTOR AT AUW AI SOCIETY

- Advising Undergraduate Students Research.

Chittagong, Bangladesh

September 2021 –Present

Toyohashi University of Technology

GRADUATE RESEARCH STUDENT AT KDE LAB

- Conducted Research for M.Eng. Degree, Supervised by Professor Masaki Aono (PhD).

Toyohashi, Japan

October 2017 –September 2019

Scholarships and Awards

INTERNATIONAL ACCOLADES

2019 **The KDDI Foundation Scholarship** for Master's Degree
(One of ten recipients in entire Japan)

Toyohashi, Japan

2017-2019 **Monbukagakusho Honors Scholarship** for Master's Degree

Toyohashi, Japan

2018, 2019 **Research Assistantship Award** at KDE Lab

Toyohashi, Japan

NATIONAL ACCOLADES

2014-2016 **Undergraduate Academic Excellence Scholarship** for Bachelor's Degree

Chittagong, Bangladesh

2015 **3rd Place**, Awarded in the Software Development Competition at IIUC Tech Fest

Chittagong, Bangladesh

Project: Electronic Health Record (EHR) System with Symptom based Disease Prediction Feature to Improve the Healthcare in Bangladesh.

Publications

JOURNAL ARTICLES

- Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono, Exploiting Transfer Learning and Hand-Crafted Features in a Unified Neural Model for Identifying Actionable Informative Tweets, *Journal of Information Processing*, Vol.29, pp.16-29, January 2021.
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, Tweet Stance Detection using Multi-Kernel Convolution and Attentive LSTM Variants, *IEICE Transactions on Information and Systems (IEICE TOIS)*, Vol.E102-D, No.12, pp.2493-2503, December 2019.

CONFERENCES/WORKSHOPS

- Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono, A Neural Network Model to Identify the Crisis-related Actionable Informative Tweets for Disaster Management, *Proceedings of the 2020 IEEE Region 10 Symposium (TENSYP)*, 5-7 June 2020, Dhaka, Bangladesh.
Best Paper Award (as a co-author)
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, Tweet Stance Detection Using an Attention based Neural Ensemble Model, *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT 2019)*, ACL, 2-5 June 2019, Minneapolis, Minnesota, USA.
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, Stance Detection on Microblog Focusing on Syntactic Tree Representation, *3rd International Conference on Data Mining and Big Data (DMBD 2018)*, Springer, 17-22 June 2018, Shanghai, China.
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, Combining a Rule-based Classifier with Ensemble of Feature Sets and Machine Learning Techniques for Sentiment Analysis on Microblog, *International Conference on Computer and Information Technology (ICCIT 2016)*, IEEE, 18-20 December 2016, Dhaka, Bangladesh.
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, Combining a Rule-based Classifier with Weakly Supervised Learning for Twitter Sentiment Analysis, *International Conference on Innovations in Science, Engineering and Technology (ICISSET 2016)*, IEEE, 28-29 October 2016, Chittagong, Bangladesh.
- Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono, CSECU_KDE_MA at SemEval-2020 Task 8: A Neural Attention Model for Memotion Analysis, *Proceedings of the 14th International Workshop on Semantic Evaluation (SemEval 2020)*, ACL, 13-14 September 2020, Barcelona, Spain.
- **Umme Aymun Siddiqua**, Abu Nowshed Chy, and Masaki Aono, KDEHatEval at SemEval-2019 Task 5: A Neural Network Model for Detecting Hate Speech in Twitter, *Proceedings of the 13th International Workshop on Semantic Evaluation (SemEval 2019)*, ACL, 6-7 June 2019, Minneapolis, Minnesota, USA.
- Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono, Neural Networks and Support Vector Machine based Approach for Classifying Tweets by Information Types at TREC 2018 Incident Streams Task, *Proceedings of the 27th Text REtrieval Conference (TREC 2018)*, NIST, 14-16 November 2018, Maryland, USA.

Presentations

AT CONFERENCES

- Poster presentation at NAACL-HLT 2019, Minneapolis, Minnesota, USA.
- Poster presentation at SemEval 2019, Minneapolis, Minnesota, USA.
- Oral presentation at DMBD 2018, Shanghai, China.
- Oral presentation at ICCIT 2016, Dhaka, Bangladesh.
- Oral presentation at ICISSET 2016, Chittagong, Bangladesh.

Skills

Programming Languages	C, C++, R, Java, JavaScript, Python, Matlab
Frameworks & Libraries	Keras, Tensorflow, Scikit-learn, NLTK, Gensim, PyTorch, Hugging Face
IDE Experiences	Codeblocks, Visual Studio, Eclipse, PyCharm, RStudio, Jupyter, Atom, LaTeX
Certifications	Deep Learning Specialization by DeepLearning.AI Natural Language Processing Specialization by DeepLearning.AI Python for Everybody Specialization by University of Michigan
IT Training	Industrial Training on Software Development Institution: Scorpion Corporation, Chittagong.

Projects

TITLES

- Electronic Health Record (EHR) System with Symptom based Disease Prediction Feature To Improve The Healthcare In Bangladesh
- Student Information Management and Result Processing System
- Online Banking System (Transaction Part)
- Social Networking Blog

TOOLS USED

- HTML, XHTML, CSS, JavaScript, PHP, AJAX, jQuery, ERD, MySQL.

Languages

- English – Full Professional Proficiency
- Bangla – Native or Bilingual Proficiency
- Japanese - Elementary Proficiency

Co-curricular Activities

ASSISTANT GENERAL SECRETARY OF THE COMPUTER CLUB, IIUC

March 2015 –February 2016

- Organized IIUC Tech Fest 2014, 2015.
 - Events: Programming Contest, Software Development, Idea Generation, Tech Quiz, Debate Competition, Project Show, Robo Fight, and Poster Design.

PROGRAMMING CONTEST SECRETARY OF THE COMPUTER CLUB, IIUC

March 2013 –February 2015

- Arranged Inter University Programming Contest 2013, 2014, and 2015.

VOLUNTEER AT DIVISIONAL SCIENCE OLYMPIAD

January 2015

- Set Up and Ensured the Event Became Successful.

Travel History

- United States *June 2019*
- China *June 2018*
- Japan *October 2017 –September 2019*

References

Available Upon Request.