

Umme Aymun Siddiqua

E-mail: umme.siddiqua@auw.edu.bd

- Education:** Degree: Master of Engineering, 2019.
Institution: Toyohashi University of Technology, Japan.
Major: Computer Science and Engineering
- Degree: Bachelor of Science in Engineering, 2016.
Institution: International Islamic University Chittagong.
Major: Computer Science and Engineering
Ranked 1st in Order of Merit.
- Professional Experience:** **Junior Instructor in Computer Science, AA Teaching Assistant in CS50, UG**
Asian University for Women
Chittagong, Bangladesh.
- Working Period: January 2020 ~ Present
Major Responsibility: Teach courses, curriculum development and assist students.
Courses in 2021:
-Introduction to Computing and Programming
-CS50's Introduction to Computer Science by Harvard University (Lab)
- Research Interests:**
- Natural Language Processing
 - Social Media Analysis
 - Opinion Mining and Knowledge Discovery
 - Computational Linguistics
 - Machine Learning
 - Deep Learning
- Research topics that I worked on over the years include: Sentiment Analysis, Stance Detection, Memotion Analysis, Incident Stream, and Hate Speech Detection.
- Research Experience:** Graduate Research Student
Knowledge Data Engineering and Information Retrieval Laboratory,
Toyohashi University of Technology, Japan.
October 2017 ~ September 2019
- M.Sc. Engineering, Supervised by Professor Masaki Aono (Ph.D)
- Academic Thesis:** **Master Thesis Title:** Stance Detection on Microblogs Using Syntactic Tree Kernels and Deep Neural Networks.
- Supervised by Masaki Aono, Ph.D
Professor, Department of Computer Science and Engineering,
Toyohashi University of Technology, Japan.
- Bachelor Thesis Title:** Sentiment Analysis.
- Supervised by Tanveer Ahsan
Associate Professor and Chairman,
Department of Computer Science and Engineering,
International Islamic University Chittagong, Bangladesh.

**Research
Publications:**

Articles in Journals:

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

Peer-Reviewed International Conferences:

- *“A Neural Network Model to Identify the Crisis-related Actionable Informative Tweets for Disaster Management”*
Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono
Proceedings of the 2020 IEEE Region 10 Symposium (TENSYMP), 5-7 June 2020, Dhaka, Bangladesh. **Best Paper Award (as a co-author)**
- *“Tweet Stance Detection Using an Attention based Neural Ensemble Model”*
Umme Aymun Siddiqua, Abu Nowshed Chy, and Masaki Aono
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.
- *“Stance Detection on Microblog Focusing on Syntactic Tree Representation”*
Umme Aymun Siddiqua, Abu Nowshed Chy, and Masaki Aono
3rd International Conference on Data Mining and Big Data (DMBD 2018), Springer, 17-22 June 2018, Shanghai, China.
- *“Combining a Rule-based Classifier with Ensemble of Feature Sets and Machine Learning Techniques for Sentiment Analysis on Microblog”*
Umme Aymun Siddiqua, Tanveer Ahsan, and Abu Nowshed Chy
International Conference on Computer and Information Technology (ICCIT 2016), IEEE, 18-20 December 2016, Dhaka, Bangladesh.
- *“Combining a Rule-based Classifier with Weakly Supervised Learning for Twitter Sentiment Analysis”*
Umme Aymun Siddiqua, Tanveer Ahsan, and Abu Nowshed Chy
International Conference on Innovations in Science, Engineering and Technology (ICISSET 2016), IEEE, 28-29 October 2016, Chittagong, Bangladesh.

International Research Workshops:

- *“KDEHatEval at SemEval-2019 Task 5: A Neural Network Model for Detecting Hate Speech in Twitter”*
Umme Aymun Siddiqua, Abu Nowshed Chy, and Masaki Aono
Proceedings of the 13th International Workshops on Semantic Evaluation (SemEval 2019), ACL, 6-7 June 2019, Minneapolis, Minnesota, USA.
- *“Neural Networks and Support Vector Machine based Approach for Classifying Tweets by Information Types at TREC2018 Incident Streams Task”*
Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono
Proceedings of the 27th Text REtrieval Conference (TREC 2018), NIST, 14-16 November 2018, Maryland, USA.

- “CSECU_KDE_MA at SemEval-2020 Task 8: A Neural Attention Model for Memotion Analysis”
Abu Nowshed Chy, **Umme Aymun Siddiqua**, and Masaki Aono
Proceedings of the 14th International Workshops on Semantic Evaluation (SemEval-2020), 12-13 December 2020, Barcelona, Spain, collocated with COLING 2020.

Awards and Honors:

International Accolades:

- **The KDDI Foundation Scholarship** for Master’s Degree
Duration: April 2019 ~ September 2019
- **Monbukagakusho Honors Scholarship** for Master’s Degree
Duration: October 2017 ~ March 2019

National Accolades:

- Awarded in the Software Development competition for the project “*Electronic Health Record (EHR) System with Symptom based Disease Prediction Feature to Improve the Healthcare in Bangladesh*” at IIUC Tech Fest 2015.
Ranked: 2nd Runner Up

Competitive Programming Experiences:

- ACM ICPC Dhaka Regional Preliminary Contest, 2015 and 2014.
- National Girls Programming Contest (NGPC) held at Daffodil International University, Dhaka, 2015.
- Chittagong University of Engineering Technology (CUET) Inter-University Programming Contest, 2015 and 2014.
- International Islamic University Chittagong (IIUC) Inter-University Programming Contest, 2015, 2014, and 2013.
- University of Science and Technology Chittagong (USTC) Inter-University Programming Contest, 2015.

Academic Projects:

- **At Software Development Course:**
Development of a well-documented “*Electronic Health Record (EHR) System with Symptom based Disease Prediction Feature To Improve The Healthcare In Bangladesh*”.
Tools: HTML, XHTML, CSS, JavaScript, PHP, AJAX, jQuery, ERD, MySQL.
- **At System Analysis and Design Course:**
Development of a well-documented “*Online Banking System (Transaction Part)*”.
Tools: HTML, XHTML, CSS, JavaScript, PHP, AJAX, jQuery, ERD, MySQL.
- **At Internet Technologies and Web Programming Course:**
Development of a well-documented “*Online Student Information Management and Result Processing System*”.
Tools: HTML, XHTML, CSS, JavaScript, PHP, AJAX, jQuery, ERD, MySQL.

Additional Projects:

- Development of a well-documented “*Online Education Site*”.
Tools: HTML, JavaScript, jQuery, CSS, PHP, MySQL, AJAX.
- Development of a well-documented “*Social Networking Blog*”.
Tools: HTML, JavaScript, jQuery, CSS, PHP, MySQL, AJAX.

IT Training: Industrial Training on Software Development.
Institution: Scorpion Corporation, Chittagong.

IT Skills Set:

Programming Languages:
Python, C, C++, JAVA, PHP, VB, TCL, R.

Web Designing Tools:
HTML, XML, XHTML, JavaScript, CSS, jQuery, AJAX.

IDE Experiences:
PyCharm, Eclipse, Code Blocks, JBuilder, Visual Studio, Matlab, PHP Editor, Turbo C, Jupyter Notebook, IBM Watson, Atom, Notepad++.

Modeling Languages:
E-R Diagram, UML.

Content Management System:
WordPress, Joomla, Laravel.

Database:
SQL, MySQL, MS SQL, MS ACCESS, Oracle.

Deep Learning Tools:
PyTorch, TensorFlow, Keras, Theano, Torch, Chainer, Caffe.

Machine Learning Tools:
Scikit Learn, Weka, RapidMiner.

Operating Systems:
Ubuntu 20.10, Red Hat 9, and Windows 1998, 2000, XP, 7, 8, 10.

Software Packages:
LaTeX, Google Suite, MS-Office (2019, 2016, 2010, 2007, 2003, 2000), Open Office, MS Visio, Autocad, SPSS.

Version Control Software:
Git, GitHub

Designing Software:
Adobe Photoshop, Illustrator

Language Skills: Bengali: Native or bilingual proficiency.
English: Full professional proficiency in all aspect.
Japanese: Elementary proficiency.

Extra-curricular Activities: Programming Contest Secretary (PCS) of the Computer Club
International Islamic University Chittagong.
March, 2013 ~ February, 2015

Assistant General Secretary (AGS) of the Computer Club
International Islamic University Chittagong.
March, 2015 ~ June, 2016

- Organizations:**
- **ACL (Association for Computational Linguistics)**
Member
Duration: April 2019 ~ Present
 - **The Institution of Engineers, Bangladesh: IEB**
Member
Duration: December 2017 ~ Present

Travel History: USA, June 2019
China, June 2018
Japan, September 2017 ~ September 2019

Referees: Available upon request.