

## Tazin Afrin, PhD

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## EXPERIENCE     AI Engineer at Educational Testing Services

August 2022 - Current

- Developed advanced AI solutions for automated scoring of educational assessments using NLP, ML, and LLM techniques. Led end-to-end development, from concept to deployment, optimizing algorithms for enhanced accuracy and efficiency. Collaborated cross-functionally to align with project goals and educational standards.

Graduate Research Assistant at University of Pittsburgh

August 2017 - April 2022

- Developed the ArgRewrite revision assistant tool, accessible via a RESTful API, available at <http://argrewrite.cs.pitt.edu>.
- Designed and implemented a user-friendly web-based interface, enhancing accessibility and usability.
- Led comprehensive user studies to evaluate tool effectiveness, gathering and analyzing data to refine features and functionality.

NLP Intern at Philips Lighting Research, Cambridge, MA

June 2018 - August 2018

- Designed and implemented a model to generate structured query language (SQL) from natural language queries for conversational AI systems.

### Other Experiences:

Teaching Assistant at University of Pittsburgh

August 2015 - July 2017

Teaching Assistant at West Virginia University

August 2013 - May 2015

## SKILLS

## Programming Languages: *Python*, Java, C++, SQL

**Machine Learning & AI:** TensorFlow, PyTorch, Scikit-Learn, NLTK, NumPy, SciPy, Keras, HuggingFace, Pandas, Natural Language Processing (NLP)

## Web Technologies: HTML/CSS, JavaScript

### Cloud Platforms: AWS (EC2, S3, SageMaker)

## Tools & Frameworks: Git, Docker, W&B

**Others:** Agile Development, Data Visualization (Matplotlib), Problem Solving, Technical Writing (L<sup>A</sup>T<sub>E</sub>X)

**EDUCATION**      **Ph.D. in Computer Science, University of Pittsburgh**

Graduated: April 2022

Thesis: Desirable Revisions of Evidence and Reasoning for Argumentative Writing

Advisor: Dr. Diane Litman, Professor, Department of Computer Science, UPitt

Lab Website: <https://petal-cs-pitt.github.io/>

Selected Courses: Computational Linguistics (Spring2018, Carnegie Mellon University(CMU)), Neural Networks for Natural Language Processing (Fall2017, CMU), Natural Language Processing (Spring2017), Human Computer Interaction (Fall2016), Machine Learning (Spring2016), Foundations of Artificial Intelligence (Fall2015), Distributed Systems(Fall2016), Compiler Design (Spring 2016)

CGPA: 3.62

## M.Sc. in Computer Science, West Virginia University

Graduated: July 2015

Thesis: The Longest Common Subsequence via Generalized Suffix Trees

Advisor: Dr. Donald Adjero, Professor, LCSEE, WVU

CGPA: 4.00

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

Graduated: April 2012

Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh

# Thesis: A Study On Pairwise Compatibility Graph

Advisor: Dr. Md. Saidur Rahman, Professor, CSE, BUET

CGPA: 3.63

## PUBLICATION **Notable Conference Publications:**

- **Tazin Afrin**, Diane Litman, “Learning from Auxiliary Sources in Argumentative Revision Classification” In Proceedings of the 24th International Conference on Artificial Intelligence in Education, AIED 2023, Tokyo, Japan, Springer.
- **Tazin Afrin**, Diane Litman, “Predicting Desirable Revisions of Evidence and Reasoning in Argumentative Writing” In Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics, EACL Findings '23, Dubrovnik, Croatia. Association for Computational Linguistics.
- **Tazin Afrin**, Omid Kashefi, Christopher Olshefski, Diane Litman, Rebecca Hwa, and Amanda Godley, “Effective Interfaces for Student-Driven Revision Sessions for Argumentative Writing” In CHI Conference on Human Factors in Computing Systems (CHI '21), Online, May 8–13, 2021, Yokohama, Japan.
- **Tazin Afrin**, Elaine Wang, Diane Litman, Lindsay Clare Matsumara, and Richard Correnti, “Annotation and Classification of Evidence and Reasoning Revisions in Argumentative Writing” Proceedings of 15th Workshop on Innovative Use of NLP for Building Educational Applications, July, 2020, Virtual.
- **Tazin Afrin**, Diane Litman, “Identifying Editor Roles in Argumentative Writing from Student Revision Histories” Proceedings of the 20th International Conference on Artificial Intelligence in Education (AIED), June 25th - 29th 2019, Chicago, Illinois, USA.
- **Tazin Afrin**, Diane Litman, “Annotation and Classification of Sentence-level Revision Improvement” The 13th Workshop on Innovative Use of NLP for Building Educational Applications, NAACL-HLT 2018.

## **Notable Journal Publications:**

- Omid Kashefi, **Tazin Afrin**, Meghan Dale, Christopher Olshefski, Amanda Godley, Diane Litman, Rebecca Hwa, “ArgRewrite V.2: an Annotated Argumentative Revisions Corpus”, Language Resources and Evaluation, Springer, Online.
- Richard Beal, **Tazin Afrin**, Aliya Farheen, Don Adjeroh, “A new algorithm for ‘the LCS problem’ with application in compressing genome resequencing data.” IEEE International Conference on Bioinformatics and Biomedicine (BIBM), pp.69-74, 2015.
- Full list of publications: <https://tazin-afrin.github.io/publications.html>

## NOTABLE PROJECTS

- Question Answering from Text/Paragraph, SQuAD dataset, **Python, PyTorch, AWS**
- Fake News Challenge : Stance Detection using **Python**
- MINI-GOOGLE search engine using **C** and **Hadoop**
- Compiler for MINI-JAVA using **C** using **Lex & YACC**
- Public Speech Delivery and Pronunciation Feedback Using Vibration Interfaces, **Android, Python**
- Image Viewer and Editor (zoom, contrast, flip, crop) using **Java, Javascript**
- Minesweeper Game, Graphics Mega Structure Modeling using **C, OpenGL**

## ACTIVITIES & AWARDS

- Reviewer: BEA 2019–2024; AIED 2019; ACL 2019, CHI 2023
- Vice-President, Computer Science Graduate Student Organization at UPitt May 2017 - April 2018
- Pitt Ambassador at Grace Hopper Conference 2017
- Student Scholarship Award, LearnLab Summer School, Carnegie Mellon University 2017
- **Dean’s Honor List** (Senior year of Undergraduate Study) 2011
- **Award from Ministry of Education, Government of Bangladesh**
- Excellence in Higher Secondary and Secondary School Certificate Examination, 2004-2011