Tunazzina Islam

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📱 +1(757)264-8410   Residential Status: Permanent Resident of USA

RESEARCH INTEREST

My research interests broadly lie in **AI for Societal Impact**, at the intersection of **Natural Language Processing (NLP)** and **Computational Social Science (CSS)**.

EDUCATION

🎓 **Purdue University**   **West Lafayette, IN**

Ph.D. in Computer Science (CS)   *Jan 2019 - Feb 2025*

- Research Area: NLP, CSS.
- Ph.D. Thesis: Understanding and Analyzing Microtargeting Pattern on Social Media.
- Advisor: Dan Goldwasser
- Committee Members: Ming Yin, Ruqi Zhang, Christopher W. Clifton

🎓 **Old Dominion University (ODU)**   **Norfolk, VA**

M.S. in Computer Science (CS), *CGPA: 3.97/4.00*   *Aug 2018*

- Research Area: Bioinformatics & Computational Biology, HPC.
- Advisor: Desh Ranjan, Mohammad Zubair

🎓 **Bangladesh University of Engineering and Technology (BUET)**   **Dhaka, Bangladesh**

B.Sc. in Computer Science and Engineering (CSE)   *Feb 2013*

- Thesis: Software Development of Practical Problems.
- Advisor: Md. Mostofa Akbar

WORK EXPERIENCES

Purdue University, West Lafayette, IN   *Mar 2025 - Present*

- Visiting Assistant Professor, Computer Science

Purdue University, West Lafayette, IN   *Jan 2019 - Mar 2025*

- Research Assistant
- Teaching Assistant

Old Dominion University, Norfolk, VA   *Aug 2015 - Aug 2018*

- Research Assistant
- Teaching Assistant

Dohatec New Media, Dhaka, Bangladesh   *Mar 2013 - May 2015*

- Software Developer

GRANTS

Graduate School Summer Research Grant ($\mathbf{17,568}$), Purdue University.   *2024, 2022, 2021*

Ongoing Proposals:

- NSF TTP (Co-Investigator) *[Under Submission]*
- NSF HNDS (Co-Investigator) *[Under Submission]*

AWARDS AND ACHIEVEMENTS

Best poster award in AAAI/SIGAI Doctoral Consortium, AAAI.   *2025*

AAAI/SIGAI Doctoral Consortium, AAAI.	*2025*
Diversity and Inclusion Award (D&I Award), NAACL.	*2025*
Graduate Women in Science Program (WISP) Award, CoS, Purdue University.	*2025*
ADSA Travel Award, Academic Data Science Alliance Annual Meeting, UMich.	*2024*
MSLD Travel Award, Midwest Speech and Language Days.	*2025, 2024*
Graduate Teaching Award, CS, Purdue University.	*Spring 2023*
ACM-W Scholarship for attendance at ICWSM 2022.	*2022*
ICWSM Travel Grant.	*2021, 2022*
IJCAI Travel Grant.	*2019*
SIGKDD Student Travel Award.	*2019*
CSGSA Travel Grant, CS, Purdue University.	*2019, 2023*
CRA-W Grad Cohort Travel Award.	*2016, 2019, 2020*
Research Assistantship, Purdue University, West Lafayette, IN.	*2021 - 2023*
Teaching Assistantship, Purdue University, West Lafayette, IN.	*2019 - 2025*
Fully paid International Summer School on HPC, Kobe, Japan.	*2019*
NSF Travel Award for attendance at SCEC Workshop, Delhi, India.	*2018*
Computer Science Outstanding Graduate Researcher - Fall 2017, ODU.	*2018*
Travel Award UM Explore Graduate Studies in CSE Workshop, Ann Arbor, MI.	*2018*
2nd prize in Tapia Student Poster Competition, Atlanta, GA.	*2017*
ACM Richard Tapia Scholarship.	*2016, 2017*
Capital Region Women in Computing (CAPWIC) Scholarship, Washington DC.	*2017*
Modeling and Simulation Fellowship by Old Dominion University.	*2016 - 2018*
GHC Scholar, Grace Hopper Celebration of Women in Computing, Houston, TX.	*2016*
Graduate Assistantship, Old Dominion University, Norfolk, VA.	*2015 - 2018*
Dean's List Award, BUET.	*2012 - 2013*
University Merit Scholarship, BUET.	*2012-2013*
Education Board Scholarship in Higher Secondary by Bangladesh Government.	*2007 - 2013*
Education Board Scholarship in Secondary School by Bangladesh Government.	*2005 - 2007*
Award from Daily Prothom Alo Newspaper for obtaining GPA 5.0 in S.S.C.	*2005*
Junior Scholarship in Grade 8 by Bangladesh Government.	*2002 - 2005*
Primary Scholarship in Grade 5 by Bangladesh Government.	*1999 - 2002*

PUBLICATIONS

25 peer-reviewed publications, among them **20** first author papers. ***** indicates **equal contribution**. ⊕ indicates **Papers with students I mentored**. My work has been published in leading venues, including top Natural Language Processing conferences (NAACL, EMNLP, ACL), Computational Social Science conferences (AAAI ICWSM, ACM WebSci), AI Ethics (AAAI/ACM AIES), Artificial Intelligence (AAAI), and Big Data (IEEE Big Data).

Doctoral Consortium..

1. **[AAAI 2025]** *Understanding Microtargeting Pattern on Social Media*.
   Tunazzina Islam. 39th AAAI Conference on Artificial Intelligence (30th AAAI-25 Doctoral Consortium). [Proceedings] [Poster] [Award] [Announcement] [Featured in AIhub]

🏆**Won the best poster award in 2025 AAAI/SIGAI Doctoral Consortium**.

Peer Reviewed Conference Papers...

15. **[EMNLP 2025]** *Post-hoc Study of Climate Microtargeting on Social Media Ads with LLMs: Thematic Insights and Fairness Evaluation.*
    Tunazzina Islam, Dan Goldwasser. Findings of the 2025 Conference on Empirical Methods in Natural Language Processing. [Acceptance rate: 17.35%] [Paper link][arXiv] [Slide]

14. **[NAACL 2025]** *Uncovering Latent Arguments in Social Media Messaging by Employing LLMs-in-the-Loop Strategy.*
    Tunazzina Islam, Dan Goldwasser. Findings of the 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics. [Acceptance rate: 14.7%] [Paper link] [arXiv] [Slide]

13. **[ICWSM 2025]** *Discovering Latent Themes in Social Media Messaging: A Machine-in-the-Loop Approach Integrating LLMs.*
    Tunazzina Islam, Dan Goldwasser. 19th International AAAI Conference on Web and Social Media. [Acceptance rate: 20%] [Paper link] [arXiv] [Slide]

12. **[WebSci 2025]** *Can LLMs Assist Annotators in Identifying Morality Frames? - Case Study on Vaccination Debate on Social Media.*
    Tunazzina Islam, Dan Goldwasser. In Proceedings of the 17th ACM Web Science Conference 2025. Oral Presentation. [Acceptance rate: 39.6%] [Paper link] [arXiv] [Slide]

11. **[AIES 2023]** *Analysis of Climate Campaigns on Social Media using Bayesian Model Averaging.*
    Tunazzina Islam, Ruqi Zhang, Dan Goldwasser. 6th AAAI/ACM Conference on AI, Ethics, and Society 2023. Oral Presentation, top 11%. [Acceptance rate: 28.9%] [Paper link] [arXiv] [Slide]

10. **[ICWSM 2023]** *Weakly Supervised Learning for Analyzing Political Campaigns on Facebook.*
    Tunazzina Islam, Shamik Roy, Dan Goldwasser. 17th International AAAI Conference on Web and Social Media. [Acceptance rate: 20%] [Paper link] [arXiv] [Slide]

9. **[ACL 2023]** *Interactive Concept Learning for Uncovering Latent Themes in Large Text Collections.*
    Maria Leonor Pacheco, **Tunazzina Islam**, Lyle Ungar, Ming Yin, Dan Goldwasser. Findings of the Association for Computational Linguistics: ACL'23. [Acceptance rate: 18.4%] [Paper link] [arXiv]

8. **[IEEE Big Data 2022]** *Understanding COVID-19 Vaccine Campaign on Facebook using Minimal Supervision.*
    Tunazzina Islam, Dan Goldwasser. 2022 IEEE International Conference on Big Data. [Acceptance rate: 19.2%]. Also accepted at Workshop on NLP for Positive Impact 2022 (**NLP4PI @EMNLP 2022**). [Paper link] [arXiv] [Slide] [Poster @NLP4PI 2022]

7. **[NAACL 2022]** *A Holistic Framework for Analyzing the COVID-19 Vaccine Debate.*
    Maria Leonor Pacheco*, **Tunazzina Islam***, Monal Mahajan, Andrey Shor, Ming Yin, Lyle Ungar, Dan Goldwasser. Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies. [Acceptance rate: 21%] [Paper link] [arXiv] [Slide]

6. **[ICWSM 2022]** *Twitter User Representation Using Weakly Supervised Graph Embedding.*
    Tunazzina Islam, Dan Goldwasser. 16th International AAAI Conference on Web and Social Media. [Acceptance rate: 20%] [Paper link] [arXiv] [Slide] [Featured as ACM-W Scholar]

5. **[ICWSM 2021]** *Analysis of Twitter Users' Lifestyle Choices using Joint Embedding Model.*
   Tunazzina Islam, Dan Goldwasser. 15th International AAAI Conference on Web and Social Media. [Acceptance rate: 20%] [Paper link] [arXiv] [Slide] [Research Highlight]

4. **[ICSC 2021]** *Do You Do Yoga? Understanding Twitter Users' Types and Motivations using Social and Textual Information.*
   Tunazzina Islam, Dan Goldwasser. 2021 IEEE 15th International Conference on Semantic Computing. [Acceptance rate: 30%] [Paper link] [arXiv] [Slide]

3. **[BIBE 2019]** *Nanopore Guided Assembly of Segmental Duplications near Telomeres.*
   Eleni Adam, **Tunazzina Islam**, Desh Ranjan, Harold Riethman. 19th IEEE International Conference on Bioinformatics and Bioengineering. [Paper link]

2. **[ISBRA 2018]** *REXTAL: Regional Extension of Assemblies Using Linked-Reads.*
   Tunazzina Islam, Desh Ranjan, Eleanor Young, Ming Xiao, Mohammad Zubair, Harold Riethman. 14th International Symposium on Bioinformatics Research and Applications.
   Also accepted as a poster at Grace Hopper Celebration of Women in Computing (GHC), 2018. [Paper link] [PDF] [Poster @GHC 2018] [Poster PDF @GHC 2018]

1. **[ICPP 2017]** *A Machine Learning Approach for Efficient Parallel Simulation of Beam Dynamics on GPUs.*
   Kamesh Arumugam, Desh Ranjan, Mohammad Zubair, Balsa Terzic, Alexander Godunov, **Tunazzina Islam**. 46th International Conference on Parallel Processing. [Paper link]

Peer Reviewed Workshop Papers and Posters...

7. **[DaSH@EMNLP 2022]** *Interactively Uncovering Latent Arguments in Social Media Platforms: A Case Study on the Covid-19 Vaccine Debate.*
   Maria Leonor Pacheco, **Tunazzina Islam**, Lyle Ungar, Ming Yin, Dan Goldwasser. Fourth Workshop on Data Science with Human in the Loop: Language Advances. [Paper link]

6. **[KDDBHI@IEEE Big Data 2020]** *Does Yoga Make You Happy? Analyzing Twitter User Happiness using Textual and Temporal Information.*
   Tunazzina Islam, Dan Goldwasser. Big Data Analytic Technology for Bioinformatics and Health Informatics at 2020 IEEE International Conference on Big Data. [Paper link] [arXiv] [Slide]

5. **[SocialNLP@IJCAI 2019]** *Ex-Twit: Explainable Twitter Mining on Health Data.*
   Tunazzina Islam. 7th International Workshop on Natural Language Processing for Social Media in conjunction with International Joint Conferences on Artificial Intelligence. [arXiv] [PDF] [Slide]

4. **[WISDOM@KDD 2019]** *Yoga-Veganism: Correlation Mining of Twitter Health Data.*
   Tunazzina Islam. 8th International Workshop on Issues of Sentiment Discovery and Opinion Mining co-located with ACM Knowledge Discovery and Data Mining 2019. [arXiv] [PDF] [Slide]

3. **[CSBW@ACM-BCB 2017]** *A Method for Characterization of β-strand Twist from a 3-Dimensional Image of a Protein.*
   Tunazzina Islam, Michael Poteat, Jing He. Computational Structural Bioinformatics Workshop in conjunction with 8th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics. [Paper link] [PDF]

2. **[TAPIA 2017]** *Protein Secondary Structure Detection using Pattern Recognition and Geometric Modeling.*
   Tunazzina Islam, Jing He. ACM Richard TAPIA Celebration of Diversity in Computing 2017, Atlanta, GA, USA. [Poster PDF @TAPIA 2017] [Poster @TAPIA 2017]
   🏆**Won 2nd Prize in Tapia Student Poster Competition 2017**.

1. **[IPAC 2017]** *Simulations of Coherent Synchrotron Radiation on Parallel Hybrid GPU/CPU Platform.*
Balsa Terzić, Kamesh Arumugam, Dallan Duffin, Alexander Godunov, **Tunazzina Islam**, Desh Ranjan, Sukesh Sangam, Mohammad Zubair. 8th International Particle Accelerator Conference. [Poster Proceedings]

Peer Reviewed Journal Papers...

2. **[TCBB 2019]** *Analysis of Subtelomeric REXTAL Assemblies Using QUAST.*
Tunazzina Islam, Desh Ranjan, Eleanor Young, Ming Xiao, Mohammad Zubair, Harold Riethman. IEEE/ACM Transactions on Computational Biology and Bioinformatics. [Paper link] [PDF]

1. **[JCB 2018]** *Quantification of Twist from the Central Lines of β-strands.*
Tunazzina Islam, Michael Poteat, Jing He. Journal of Computational Biology (**JCB**), January 2018. [Paper link] [PDF]

Preprints...

4. *Paid Voices vs. Public Feeds: Interpretable Cross-Platform Theme Modeling of Climate Discourse$^{\oplus}$*
Samantha Sudhoff*, Pranav Perumal, Zhaoqing Wu, **Tunazzina Islam***. (Under Review) [arXiv]

3. *Who Gets Which Message? Auditing Demographic Bias in LLM-Generated Targeted Text.*
Tunazzina Islam. (Under Review) [arXiv]

2. *Reasoning-Based Refinement of Unsupervised Text Clusters with LLMs.*
Tunazzina Islam. (Under Review)

1. *Iterative Topic Taxonomy Induction with LLMs: A Case Study of Electoral Advertising$^{\oplus}$*
Alexander Brady*, **Tunazzina Islam***. (Under Review) [arXiv]

ACADEMIC SERVICES

Tutorial Co-Chair
International AAAI Conference on Web and Social Media (ICWSM)   *2026, 2025*
Organizer & Chair
Birds of a Feather (BoF) session, NAACL   *2025*
Area Chair (AC)
Area Chair: ACL Rolling Review (ARR)   *2025*
Senior Program Committee: International AAAI Conference on Web and Social Media (ICWSM)   *2026*
Associate Chair: Computer-Supported Cooperative Work and Social Computing (CSCW)   *2024 - 2025*
Conference Reviewer

ACL Rolling Review (ARR)	*2021 - 2026*
International AAAI Conference on Web and Social Media (ICWSM)	*2022 - 2026*
AAAI Conference on Artificial Intelligence	*2023 - 2026*
AAAI Special Track on AI for Social Impact (AISI)	*2026*
North American Chapter of the Association for Computational Linguistics (NAACL)	*2024 - 2025*
Empirical Methods in Natural Language Processing (EMNLP)	*2021 - 2025*
Conference on Language Modeling (COLM)	*2025 - 2026*
ACM TheWebConf (WWW)	*2025*
ACM Conference on Human Factors in Computing Systems (CHI)	*2025*
Computer-Supported Cooperative Work and Social Computing (CSCW)	*2025*
Association for Computational Linguistics (ACL)	*2021 - 2024*
International Conference on Computational Linguistics (COLING)	*2020 - 2025*
LREC-COLING	*2024*
International Conference on Social Informatics (SocInfo)	*2022*
HEALTHINFO	*2021*

Workshop Reviewer

ACL Student Research Workshop (SRW)	*2023*
Student Research Workshop, NAACL	*2022*

Institutional Service

Vice President, Computer Science Graduate Student Association, Purdue University	*2022 - 2023*

Conference Service

Ambassador for ICWSM	*2024*

Conference Volunteer

EMNLP student volunteer (Virtual)	*2022*
ICWSM student volunteer	*2022*
KDD student volunteer	*2019*

Journal Reviewer

Complementary Therapies in Clinical Practice (CTCP)	*2021*

Research Mentor

Computer Science Graduate Student Association, Purdue University	*Fall 2024*
Lumiere Education	*May - Aug, 2021*

INVITED TALKS

Tutorial

[T6] **Analyzing Microtargeting on Social Media**

Academic Data Science Alliance Annual Meeting, University of Michigan, Ann Arbor.	*Oct 2024*

Talks

[T5] Understanding Microtargeting Patterns in the Era of LLMs

IEEE Workshop on Distributed, Secure, and Trustworthy Intelligence with LLMs (DISTILL) *Nov 2025*

[T4] Understanding and Analyzing Microtargeting Patterns on Social Media

School of Computing Technologies, RMIT University, Melbourne Australia. *Jun 2025*

Birds of a Feather (BoF) Session, NAACL, Albuquerque, NM. *May 2025*

Department of Computer Science, Georgia State University, Atlanta, GA. *Mar 2025*

Department of Computer Science, Florida State University, Tallahassee, FL. *Feb 2025*

[T3] Can LLMs Assist Annotators in Identifying Morality Frames? - Case Study on Vaccination Debate on Social Media

Academic Data Science Alliance Annual Meeting, University of Michigan, Ann Arbor. *Oct 2024*

[T2] Uncovering Latent Themes of Messaging on Social Media by Integrating LLMs: A Case Study on Climate Campaigns

Academic Data Science Alliance Annual Meeting, University of Michigan, Ann Arbor. *Oct 2024*

[T1] Uncovering Latent Arguments in Social Media Messaging by Employing LLMs-in-the-Loop Strategy

Midwest Speech and Language Days (MSLD), University of Michigan, Ann Arbor. *Apr 2024*

TEACHING EXPERIENCE

Visiting Assistant Professor, Purdue University, West Lafayette, IN
- CS 390: AI Forge; Semester: Spring 2026
- CS 490/590: Applied GenAI Research Project; Semester: Spring 2026
- CS 390: AI Forge I, II, III; Semester: Fall 2025
  - AI Forge I: Basics of Large Language Models
  - AI Forge II: In-context learning and RAG
  - AI Forge III: Multi-modal generative AI models
- CS 490, CS 590: Applied GenAI Research Project; Semester: Fall 2025

Guest Lecture
- Purdue University, Natural Language Processing, "Microtargeting on Social Media", Spring 2024

Teaching Assistant, Purdue University, West Lafayette, IN
- CS 999: AI Forge (Course Development); Semester: Spring 2025
- CS 577: Natural Language Processing; Semester: Spring 2024, Spring 2023, Spring 2022
- CS 578: Statistical Machine Learning; Semester: Fall 2023, Fall 2021
- CS 373: Data Mining And Machine Learning; Semester: Fall 2022, Fall 2024
- CS 182: Foundations of Computer Science; Semester: Summer 2020, Spring 2020
- CS 381: Introduction to the Analysis of Algorithms; Semester: Fall 2019
- CS 251: Data Structures and Algorithms; Semester: Spring 2021, Fall 2020, Summer 2019

Teaching Assistant, Old Dominion University, Norfolk, VA
- CS 724: High-Performance Computing and Big Data; Semester: Spring 2018, Spring 2017
- CS 381: Introduction to Discrete Structures; Semester: Spring 2016
- CS 270: Introduction to Computer Architecture; Semester: Fall 2016, Fall 2015

MENTORSHIP

Samantha Sudhoff, Masters student, CS, Purdue University	*2025-2026*
Pranav Perumal, Undergraduate student, CS, Purdue University	*Fall 2025*
Jingying Hu, Ph.D. Candidate, Linguistics, Purdue University	*Spring 2026*
Cheng Wang, Masters student, CS, Purdue University	*Spring 2026*
Ryan Rittner, Masters student, CS, Purdue University	*2025-2026*
Saahil Mathur, Undergraduate student, CS, Purdue University	*2025-2026*

Jackson Burt Lowrie, Masters student, CS, Purdue University *Spring 2026*
Sai Chebrolu, Undergraduate student, CS, Purdue University *Spring 2026*
Aditya Agarwal, Undergraduate student, CS, Purdue University *Spring 2026*
Hiya Samanta, Undergraduate student, CS, Purdue University *Spring 2026*
Nakshatra Tondepu, Undergraduate student, CS, Purdue University *Spring 2026*
Sean Ruda, Undergraduate student, CS, Purdue University *Spring 2026*
Seunghyun Yoo , Undergraduate student, CS, Purdue University *Spring 2026*
Tri Vo, Undergraduate student, CS, Purdue University *Spring 2026*
Riya Singh, Undergraduate student, CS, Purdue University *Spring 2026*
Prisha Mungara, Undergraduate student, CS, Purdue University *Spring 2026*
Sarah Mohapatra, Undergraduate student, CS, Purdue University *Spring 2026*
Edward Wang, Undergraduate student, CS, Purdue University *Spring 2026*
Atharva Thakur, Undergraduate student, CS, Purdue University *2025-2026*
Alexander Brady, Masters student, CS, ETH Zurich *2024-2025*
Xinzhi Wang, Ph.D student, CS, Purdue University *Spring, Summer 2025*
Aayush Motiani, Undergraduate student, CS, UC San Diego *Summer 2021*
Eleni Adam, Ph.D. student, CS, ODU *Fall 2018*
Alice T'Poteat, Staff Software Engineer, Volley *2017-2018*

SELECTED MEDIA COVERAGE

Featured in AIhub: AAAI/SIGAI Doctoral Consortium participants: Tunazzina Islam *2025*
ACM Women in Computing Scholars: ACM-W Scholars 2022: Tunazzina Islam *2022*
ODU CS Bi-annual Newsletter: Outstanding Graduate Researcher: Tunazzina Islam *2018*
ODU CS Featured Student: Featured Student: Tunazzina Islam *2016*

REFERENCES

Will provide upon request.