Ankita Gupta

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Google Scholar

Research Interests

I am a PhD candidate in Computer Science working in **machine learning (ML), natural language processing (NLP), and computational social science (CSS)**. I develop computational methods to study *how people use language to reason and communicate in different social settings*. Towards this goal, my research focuses on understanding reasoning patterns embedded in *argumentative and narrative texts* at scale, with applications spanning *public policy, law, and health*. While developing these methods, my work focuses on addressing open challenges with using language technologies, such as *reliability, efficiency, and transparency* issues with large language models.

Education

University of Massachusetts Amherst
Ph.D., Computer Science — 2021 – Present
Advisor: Brendan T. O'Connor

Indian Institute of Science Bangalore
M.E. with Thesis, Electrical Engineering and Computer Science — 2015 – 2017

Malaviya National Institute of Technology Jaipur
B.Tech., Electrical Engineering — 2010 – 2014

Honors and Awards

Selected to attend the Future World Changers of the Academy Conference	2025
Travel award for CS & Law symposium	2025
Student fellowship by NIDCD	2025
Plenary talk at IC2S2	2024
IBM PhD Fellowship Award	2023-2024
UMass W. Bruce Croft Scholarship (one student in NLP)	2021
UMass Anuradha and Hanuma Kodavalla Scholarship (two students in the department)	2021
Grace Hopper Fellow	2021
Samsung Citizen Award	2019
Travel grant by Microsoft Research	2017
Travel grant by Robert Bosch Centre for Cyber Physical Systems	2017
Gold Medalist, Department of Electrical Engineering, MNIT	2014
All India Rank 08 in Graduate Aptitude Test	2014
KVPY Fellowship (Young Scientist Fellowship, Government of India)	2010

Research Experience

UMass Amherst — 2021 - Present
Research Assistant
Advisor: Brendan T. O'Connor
Develop computational methods for analyzing argumentative and narrative texts at scale, with applications in policy, law, and healthcare.

Microsoft Research June-Aug 2025
Research Intern, Sociotechnical Alignment Center
Mentors: Alex Chouldechova, Nick Pangakis
Developed a computational method for understanding disagreements in human and/or LLM-as-judges-based annotation workflows using LLMs and sparse autoencoders.

Thomson Reuters Feb-May 2025
Research Intern, Foundational Research
Mentor: Frank Schilder
Developed methods for improving legal language models.

IBM Research June-Sep 2023
Research Intern, Language Technologies
Mentor: Danish Contractor, Marina Danilevsky, Chulaka Gunasekara
Developed a retrieval-augmented generation method for enhancing the factuality of policy-grounded conversational systems.

IBM Research May-Aug 2022
Research Intern, Language Technologies
Mentor: Marina Danilevsky, Chulaka Gunasekara
Developed a framework for evaluating the robustness of dialogue summarization models.

Amazon 2020-2021
Applied Scientist, India Machine Learning Team
Developed contextual bandit algorithms for a recommendation system.

Samsung Research Institute 2017-2020
Lead ML Researcher, Advanced Technology Lab
Developed NLP methods for evaluating the factuality of online information.

Indian Institute of Science Bangalore 2016-2017
Research Assisant
Advisor: P.S. Sastry, Gurunath Gurrala
Developed ML methods for electrical power system instability prediction.

Publications

ACL 2025 — δ-Stance: A large-scale dataset of stances in legal argumentation.
Ankita Gupta, Doug Rice, Brendan O'Connor.
Annual Meeting of the Association for Computational Linguistics.
Also presented at: CS & Law 2025.

ACL 2025 Findings	Automated main concept generation for narrative discourse assessment in aphasia. **Ankita Gupta**, Marisa J. Hudspeth, Polly Stokes, Jacquie Kurland, Brendan O'Connor. Findings of Annual Meeting of the Association for Computational Linguistics. Also presented at: Clinical Aphasiology Conference 2025 Workshop on narrative understanding at NAACL 2025.
NLPOR COLM 2025	Cross-corpora argument analysis using textual entailment. Algis Petlin, Sue-Ellen Duffy, **Ankita Gupta**, Brendan O'Connor. Workshop on Bridging NLP and Public Opinion Research.
AJSLP 2025	Large Language Models' Ability to Assess Main Concepts in Story Retelling: A Proof-of-Concept Comparison of Human Versus Machine Ratings. Jacquie Kurland, Vishnupriya Varadharaju, Anna Liu, Polly Stokes, **Ankita Gupta**, Marisa Hudspeth, and Brendan O'Connor. American Journal of Speech-Language Pathology.
EMNLP 2025	How to Fine-Tune Safely on a Budget: Model Adaptation Using Minimal Resources Anh Pham, Mihir Thalanki, Michael Sun, Aditya Chaloo, **Ankita Gupta**, Tian Xia, Aditya Mate, Ehimwenma Nosakhare, Soundararajan Srinivasan. Empirical Methods in Natural Language Processing (industry track).
IC2S2 2024	Making sense of public participation in rulemaking using argument explication. **Ankita Gupta**, Ethan Zuckerman, Brendan O'Connor. International Conference on Computational Social Science. 🏆 Plenary talk (awarded to 2.8% submissions).
ACL 2024	Harnessing Toulmin's theory for zero-shot argument explication. **Ankita Gupta**, Ethan Zuckerman, Brendan O'Connor. Annual Meeting of the Association for Computational Linguistics.
JLC 2024	Quantifying the causal effect of gender on interruptions in Supreme Court oral arguments. Erica Cai, **Ankita Gupta**, Katherine Keith, Brendan O'Connor and Douglas Rice. Journal of Law and Courts 2024. Also presented at: New Directions in Analyzing Text as Data (TADA) 2022.
LREC-Coling 2024	NarrativeTime: Dense temporal annotation on a timeline. Anna Rogers, Marzena Karpinska, **Ankita Gupta**, Vladislav Lialin, Gregory Smelkov, Anna Rumshisky. International Conference on Computational Linguistics. Language Resources and Evaluation.
NLP4ConvAI ACL 2024	Evaluating and improving the robustness of open dialogue summarization models. **Ankita Gupta**, Chulaka Gunasekara, Hui Wan, Jatin Ganhotra, Sachindra Joshi, Marina Danivelsky. Workshop on NLP for Conversational AI.
EACL 2023 Findings	ezCoref: Towards unifying annotation guidelines for coreference resolution. **Ankita Gupta**, Marzena Karpinska, Wenlong Zhao, Kalpesh Krishna, Jack Merullo, Luke Yeh, Mohit Iyyer, Brendan O'Connor. Findings of European Chapter of the Association for Computational Linguistics. Also presented at: New England NLP Meeting Series 2023. Invited talk at: Workshop on computational models of reference, anaphora and coreference, EMNLP 2023.

NLP+CSS EMNLP 2022	Examining political rhetoric with epistemic stance detection. **Ankita Gupta**, Su Lin Blodgett, Justin H. Gross, and Brendan O'Connor. Workshop on NLP and Computational Social Science.
EMNLP 2022	DEMETR: Diagnosing Evaluation Metrics for Translation. Marzena Karpinska, Nishant Raj, Katherine Thai, Yixiao Song, **Ankita Gupta**, Mohit Iyyer. Empirical Methods in Natural Language Processing.
TADA 2021	PoliBelief: A multi-source epistemic stance dataset for analyzing political ideology. **Ankita Gupta**, Su Lin Blodgett, Justin H. Gross, and Brendan O'Connor. New Directions in Analyzing Text as Data.
TPWRS 2018	An online power system stability monitoring system using convolutional neural networks. **Ankita Gupta**, Gurunath Gurrala, PS Sastry. IEEE Transactions on Power Systems.
IJCAI 2017	Instability Prediction in Power Systems using Recurrent Neural Networks. **Ankita Gupta**, Gurunath Gurrala, PS Sastry. International Joint Conference on Artificial Intelligence.

Talks

Ruhr University Bochum and TU Darmstadt, AI & Law Seminar Series — 2025
Legal argumentative text understanding.

UMass Amherst, CSSI Seminar — 2024
Argument explication for public opinion analysis.

CRAC workshop at EMNLP, Invited talk — 2023
Annotation framework for coreference resolution.

New Directions in Analyzing Text as Data — 2021
Analyzing political ideology using epistemic stances.

Teaching Experience

Teaching Assistant — Spring 2025
Advanced Natural Language Processing, UMass Amherst

Guest Lecture — Fall 2023
ChatGPT: Models, Ethics and More, UMass Amherst

Teaching Assistant — Spring 2023
Advanced Natural Language Processing, UMass Amherst

Mentoring Experience

Algis Petlin (BS), Sue-Ellen Duffy (MS) — 2024-2025

Anh C. Pham, Mihir Thalanki, Michael Sun, Aditya Chaloo (MS) with Microsoft — Spring 2025

Edward Fung (Best URV student award), Pawan Tamang and Rishabh Devnani — Spring 2024
Undergraduate research volunteer program, scholarship-winning team

Swetha Eppalapally, Daksh Dangi, Chaithra Bhat (MS) with Adobe	Spring 2024
Kate Sorz, Kaitlyn Malsky, Algis Petlin (BS)	Winter 2024
Dat Duong, Philip George, Nirupan Ananthamurugan (MS) with Google	Spring 2023

Service and Outreach

Reviewing: ARR, NeurIPS, COLM, IC2S2, EMNLP, ACL, EACL, NeurIPS	2022-Present
Committee Member, Ph.D. Applicant Support Program, CICS UMass Amherst.	2022-2023
Organizer, Machine Learning & Friends Lunch, CICS UMass Amherst.	2022-2023
Mentor, Ph.D. Applicant Support Program, CICS UMass Amherst.	2021
Volunteer, Candidate Friday, CICS UMass Amherst.	2021

Graduate Coursework

Fixing social media, Simulation and causal modeling, Advanced natural language processing, Probabilistic graphical models, Advanced algorithms, Advanced information assurance, Research methods in empirical CS, Machine learning for signal processing, Data analytics, Game theory, Pattern recognition and neural networks, Data mining, Linear and non-linear optimization.

Competencies

Languages: English (*fluent*, TOEFL 119), Hindi (*native*)
Programming: Python, C/C++ (*Certified Professional, Samsung*), Java, Matlab, R, JavaScript
Libraries and Services: Tensorflow, PyTorch, Theano, Stanford CoreNLP, NLTK, Amazon Mechanical Turk, Amazon Web Service, Amazon SageMaker, Git