

Teaching and Mentoring Experience

During my Ph.D., I was extremely fortunate to work with talented and enthusiastic undergraduate and Master's students. I have experienced teaching and mentoring students both in classroom settings and through independent research projects. A few of my experiences include:

- **Teaching assistant:** I served as a TA for Advanced Natural Language Processing during Spring 2023 (taught by Professor Mohit Iyyer¹) and Spring 2025 (taught by Dr. Haw-Shiuan Chang²). In 2023 offering, following ChatGPT release at that time, the course material required to be redesigned, especially the in-class exams. I tested the exam questions to ensure that they could not be directly answered by ChatGPT and required critical thinking to encourage students' understanding of the course material. Across both offerings, I mentored 21 project groups (4-5 students each), guiding them through research question formulation, assessing the feasibility of their proposed projects, suggesting relevant prior work, answering implementation-related queries, and gave written feedback on their project proposals and final reports. I also increased office hour availability around deadlines and actively monitored the class forum to respond within 24 hours. One project led to a paper submission [1].
- **Advising for undergraduate honors thesis:** I advised Algis Petlin (UMass CSE BS, now MS student) on his honors thesis examining cross-vaccine arguments on social media. Through weekly meetings, I guided his modeling and evaluation experiments. I also worked with him and gave him technical writing advice that resulted in his first abstract submission at a COLM workshop[2]. This experience helped me learn to advise students in building research and science communication skills.
- **PhD mentor for independent studies:** At UMass, I mentored 4 groups of 3-4 Master's students (one per semester) on semester-long research projects alongside industry mentors, as part of the course offered by Professor Andrew McCallum. Through weekly meetings, I guided their modeling and evaluation approaches and provided feedback on communicating findings to industry mentors and in course presentations. Two groups published their work: one at an ACL 2024 workshop [3] and another as a full-conference paper at EMNLP 2025 [4].
- **Mentoring for undergraduate research volunteer program:** I mentored undergraduate students on 6-12 week research projects, proposing project ideas, guiding experimental design and data collection. I maintained communication with students through weekly meetings, where I discussed and explained the implications of their results and provided them with clear next steps. One group presented at the Massachusetts Undergraduate Research Conference 2024. Based on positive mentee feedback, my team was selected as a URV Scholarship-winning team in the following term with increased funding for students. One of the students from this group was also awarded the Best URV student award based on their work.
- **Invited talks and lectures:** Beyond my formal teaching/mentoring roles, I have delivered external invited talks at universities (Ruhr University Bochum, TU Darmstadt) and industry research groups (Amazon, Microsoft Research, IBM Research), engaging with a wide range of audiences. I also gave a guest lecture on 'ChatGPT: Models, Ethics and More' in an undergraduate class at UMass. To broaden participation and create networking opportunities, I organized informal meetups for computational social science researchers at ACL 2024 and 2025, which grew from 12 to 35+ attendees, demonstrating the strong interest in spaces for interdisciplinary discussions.

¹https://www.cs.umd.edu/~miyyer/cs685_s23/

²<https://people.cs.umass.edu/~hschang/cs685/>

Teaching and Mentoring Philosophy

My teaching and mentoring experiences have shaped the principles I discuss below.

1. Building interactive and psychologically safe environments: I will prioritize interactive and inclusive teaching methods to maximize student engagement and learning. During lectures, I plan to frequently pause to ask questions, conduct polls using tools like iClickers, and incorporate team-building exercises where students discuss topics in small groups. For inclusivity, I will provide non-verbal participation options, such as collaborative Google documents where students can submit questions (anonymously or not) that I address at the end of each session. In my mentoring approach, I have maintained regular one-on-one and project meetings to provide technical support and a comfortable space for students to voice concerns they might hesitate to share in larger groups. I actively encourage independent thinking by reminding mentees that disagreeing with me or senior collaborators is perfectly acceptable, and I provide opportunities for them to explain their projects to senior collaborators during weekly meetings, helping them develop essential science communication skills while building confidence in a supportive environment. I plan to continue this way in the future.

3. Focusing on developing interdisciplinary problem-solving: I encourage my students to work on problems inspired by real-world challenges and applications. My work involves designing research questions with experts from different disciplines, requiring me to understand substantive challenges before developing technical methods. As a result, I emphasize thinking about how their work can meaningfully address these challenges beyond achieving publication. While interdisciplinary and impactful projects require patience, junior students often feel pressured to publish quickly. Having experienced this pressure myself as a junior student, I remind them of the value of prioritizing quality over quantity and maintaining resilience when progress is slower than expected or initial outcomes are disappointing.

4. Fostering critical thinking, precision, and effective communication in research: I teach my mentees to critically evaluate their projects, from refining research questions and exploring alternative methods to analyzing results with rigor, even when they appear promising. I stress articulating key assumptions behind any method or research question, since our insights depend directly on these assumptions. I also stress careful experimental design, where each step has a clear motivation, building on insights from earlier steps. This fosters a mindset that values depth over surface-level success. I pay close attention to clear writing and presentation skills. My interdisciplinary research requires communicating with audiences from very different backgrounds. Thus, I emphasize making presentations and writing accessible to diverse audiences by explaining key concepts clearly and using visual aids to help audiences grasp difficult ideas, since effective communication is as essential as solid research.

Teaching Range

I am eager to teach a wide range of computer science courses at both the undergraduate and graduate levels. For instance, at the undergraduate level, I look forward to teaching courses such as *ethics in AI and data science*, where I will teach students the basic fundamentals of AI and how to use it responsibly. I am also excited to teach other courses such as *big data analytics* and *data science*. At the graduate level, I will focus on teaching advanced technical concepts in courses such as *natural language processing* (NLP), *machine learning* (ML), as well as topics on the *foundations and applications of large language models and generative AI*. In addition to these topics, I am excited to develop and teach new interdisciplinary courses such as *NLP for computational social science* and *human-centered AI*.

References

- [1] Daksha Ladia, Anusha Sivakumar, Pranathi Rao Bora, and Rati Rastogi. Evaluating large language model preferences under controlled indifference. 2025. Under review.
- [2] Algis Petlin, Sue-Ellen Duffy, Ankita Gupta, and Brendan O'Connor. Cross-corpora argument analysis using textual entailment. In *First Workshop on Bridging NLP and Public Opinion Research (NLPOR), EMNLP*. Association for Computational Linguistics, 2025.
- [3] Swetha Eppalapally, Daksh Dangi, Chaithra Bhat, Ankita Gupta, Ruiyi Zhang, Shubham Agarwal, Karishma Bagga, Seunghyun Yoon, Nedim Lipka, Ryan Rossi, and Franck Dernoncourt. KaPQA: Knowledge-augmented product question-answering. In *Proceedings of the 3rd Workshop on Knowledge Augmented Methods for NLP*, pages 15–29, Bangkok, Thailand, August 2024. Association for Computational Linguistics.
- [4] Anh C. Pham, Mihir Thalanki, Michael Sun, Aditya Chaloo, Ankita Gupta, Tian Xia, Aditya Mate, Ehi Nosakhare, and Soundararajan Srinivasan. How to fine-tune safely on a budget: Model adaptation using minimal resources. In *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing: Industry Track*. Association for Computational Linguistics, 2025.