

Computational linguistics is a fast-moving field that has experienced massive methodological and paradigmatic shifts since I took my first NLP courses in 2016. These courses were formative in my professional development; even though most of the specific models and techniques that I was taught are now outdated, my instructors effectively taught me how to *think* like a computational linguist in identifying and addressing challenging problems. My experiences in NLP and computational linguistics have shaped my teaching philosophy: I aim to create engaging and inclusive learning environments that empower students to develop skills in critical thinking, collaboration, and application of course concepts to real-world issues. Ultimately, I aim to teach students how to learn independently such that they are prepared to take on new challenges beyond the course. Here, I first overview my teaching and mentorship experiences, and then highlight how I have put my teaching philosophy into practice.

**Teaching Experience and Interests** I have a diverse range of teaching experience in data science, computer science, and linguistics. At Michigan, I was a graduate student instructor for three graduate-level courses: **Introduction to Statistics and Data Analysis**, **Data Science Ethics**, and **Qualitative Inquiry for Data Scientists**. At Stanford, I was a teaching assistant for **From Languages to Information** (an undergraduate NLP course) and **African American Vernacular English** (an undergraduate sociolinguistics course). I have also delivered guest lectures about computational sociolinguistics to undergraduate courses at Stanford and the University of Chicago. While at Stanford, I also tutored in volunteer settings, specifically working with adults in teaching English as a second language and with middle school students in mathematics and writing.

I am interested in teaching students with varying backgrounds in computing. I envision teaching undergraduate courses such as **Introduction to Programming**, **Introduction to Data Science**, and **Computational Linguistics**. I am also interested in teaching interdisciplinary courses for advanced undergraduate and graduate students, such as **NLP and Computational Social Science** and **Ethics and NLP**. Finally, I would like to design seminars in areas such as **NLP for Political Analysis**, **Computational Sociolinguistics**, and **Hate Speech Detection**.

**Mentorship Experience** I have formally mentored seven students on NLP and computational social science research projects. I have also informally mentored early-stage PhD students, particularly in helping them scope and motivate projects and providing feedback on fellowship applications and paper drafts. I briefly describe two mentoring relationships:

- Maya Vijan (undergraduate CS major) – I advised Maya on a project about detecting framing strategies in online discussions about social movements. Because Maya was a newcomer to machine learning, I provided hands-on guidance in data collection, modeling, and analysis. Maya is a co-author of an article under review in the *Journal of Quantitative Description*.
- Pat Wall (post-graduate research assistant) – I am advising Pat on a project about the influence of political frames in social networks, based around his interest in complex systems. I meet with Pat weekly to provide high-level guidance on research questions and interpreting results. When needed, I provide lower-level support in refining methods and debugging. We are planning on submitting this work to ICWSM.

**Teaching Philosophy** I aim to help students develop critical thinking skills that will enable them to identify important problems, analyze and interpret data, and effectively communicate their ideas, thus preparing them for careers both within and outside of academia. To accomplish this goal, I engage students in the learning process through **active learning**, **building real-world connections**, and fostering an **inclusive learning environment**.

**Active Learning** Through interactive and collaborative activities, I ensure that students are not just knowledge consumers, but are also practicing skills as knowledge producers and commu-

nicators. For example, I designed several of my *African American Vernacular English* sections as semi-structured in-class debates that spoke to ongoing conversations within the discipline. For larger classes, I embrace small-group discussions in formats such as *think-pair-square-share* to check understanding and encourage lower-stakes participation during lectures. In programming-based courses such as *Introduction to Statistics and Data Analysis*, I encourage students to work together via pair programming and help out other students as a chance to reinforce their own skills.

Beyond **learning by doing**, **learning how to learn** is essential for adapting to new challenges in rapidly-evolving fields. When students have trouble with an assignment, I ask them to talk through the problem step-by-step (e.g. walking me through their code). They often identify and correct their own mistakes through this process. Moreover, I help students transition to self-sufficiency by encouraging them to practice using online resources (e.g. StackOverflow) to answer questions. Thus far, this has informed my approach to ChatGPT: while a useful resource, students should learn to critically analyze ChatGPT’s outputs, reason about why it did or didn’t help them with their particular problem, and take full responsibility when using ChatGPT. Finally, I have integrated active learning principles into assessment through peer review. By giving peers feedback on assignments, students learned to identify areas for improvement in their own work.

**Building real-world connections** I support professional development and civic engagement by emphasizing applications of academic content beyond the classroom in lectures, in-class activities, and assessments. I introduce new concepts by grounding them in students’ own experiences (e.g. motivating a unit on bias in NLP by asking students about when they’ve observed language technologies like Siri work particularly well or poorly). In *Introduction to Statistics and Data Analysis*, I teach new methods with real-world datasets from domains including politics, healthcare, and pop culture. I encourage students to relate course material to their own lives, interests, and goals outside of the classroom through open-ended assignments and well-scaffolded projects. I worked with an effective model for such assessments in *Data Science Ethics*, in which students wrote about privacy, bias, and transparency issues from the perspective of a practitioner in a field of their choice.

I highlight applications of course material for promoting social justice. For example, I designed an assignment for *From Languages to Information* in which students created classifiers to identify urgent requests for humanitarian aid from text messages immediately following natural disasters. I helped students in *African American Vernacular English* learn to recognize and address forms of linguistic discrimination in areas such as housing, employment, and criminal justice. In *Introduction to Statistics and Data Analysis*, I demonstrated via live-coding how methods such as linear regression could be applied to study patterns of gender, age, and racial biases across domains.

**Inclusion** Fostering an inclusive learning environment is critical to my teaching goals. Students’ with diverse identities, experiences, and perspectives need to all feel respected, listened to, and comfortable enough to participate without fear of judgment. Because every student has a unique style of learning, communicating, and engaging with course material, I provide multiple modalities for presenting content (e.g. live coding, slides, readings) and participation (e.g. worksheets, small-group discussions, online discussion boards). Moreover, I encourage students to practice adopting a *growth mindset*, and embrace making mistakes as a normal and healthy part of learning.

Students have highlighted my inclusive practices in course evaluations, with comments such as “Julia was great about making sure we could all approach her with questions and misunderstandings”, and identified “giving students room to talk about ideas” and “empathizing with students’ thoughts about the class and the topics being taught” as key strengths. Finally, I embrace a growth mindset as an educator. Based on student feedback and higher education research developments, I continually identify ways to improve my teaching.