To be a good educator, I believe I am a guide for my students, showing students what knowledge exists as well as scaffolding them to find knowledge and transfer their experiences to new areas**.** A guide also helps students overcome difficulties in learning and builds inclusive spaces for them to excel. I have three goals when I teach: **1) helping students deconstruct problems**; **2) making difficult mathematical concepts accessible; and 3) encouraging students to address societal implications.** My experiences in course development, teaching assistant in 4 courses and co-leading a seminar, and service to the community demonstrates how I practice these skills in preparation to become an Assistant Professor.

Teaching Experience and Course Development

I am combining these core values together in a course sequence, titled "Lifting the Black Box: Computation for Social Sciences," which I am teaching in the Winter and Spring quarters. These courses assume no prior programming experience, and students will learn core computational skills through practical examples and applications familiar to the social sciences in the python program languages. Students will also engage with the social and ethical aspects of computing's ubiquity in everyday life through weekly readings, reflections, and ethical analyses of their own programs. These courses are situated within a broader effort of Northwestern to bring computer science as an equitable partner to the university, dubbed "CS+X", and this goal reflects my interest in making computing more accessible to non-majors and non-engineers.

To develop computational knowledge and thought processes, I encourage students to deconstruct problems into operational steps. As a teaching assistant for the graduate course Social Computing, I was able to practice this skill. The class emphasizes both computational skills through machine learning and statistics but also analyzing impacts of design through the lens of social science. I guided student project development in support of these goals: pushing students to use new algorithmic techniques not covered in class, such as machine learning and natural language processing. The final project was broken into multi-step deliverables throughout the semester, so that I could provide actionable feedback on rough drafts.

I enjoy the challenge of **teaching difficult concepts from math and statistics in accessible ways**. Many undergraduates have known math anxiety that is amplified when working with groups of students from diverse backgrounds and disciplines [1]. I leverage the resources available to me at my institution, like instructional videos, worked examples in class, and small group work to facilitate understanding of perceived pain points in applied math teaching. I also include examples from different applications areas, such as discussing Snapchat filters to explain how facial recognition algorithms work. This provides students accessible entry into complex topics like machine learning and statistics, grounding their understandings and working to reduce their anxiety.

Finally, **I ask my students to consider societal implications of their work** by bringing real examples to the classroom. During my guest lecture in the "Computing, Society, and Professionalism" course, I divided students into small groups to use stakeholder analysis to decompose Facebook's Suicide Prevention AI. I pushed the students to reason about its legality, potential effectiveness, and potential positions as developers on projects like this. Students said they appreciated this attentiveness - as one student shared in anonymous feedback: *"I feel like Stevie was one of the only TAs I've ever had who have demonstrated strengths in every category. She was very organized, provided very detailed feedback on assignments, wanted to ensure we knew our material well, and was very understanding and helpful."*

In preparation for faculty teaching as the sole instructor, I have completed the CIRTL teaching certificate offered by Georgia Tech. This two-course certificate teaches graduate students the philosophy and practical skills of teaching, classroom management, designing engaging lectures, and facilitating inclusivity in the classroom. Through this experience, I've learned how to integrate formative assessments into large lecture courses as well as how to develop final assessments, like final projects that effectively evaluate learning.

Mentoring and Advising

Good mentoring and teaching are fostered by a curious, vibrant, and inclusive intellectual community. I took numerous positions at Georgia Tech to foster this atmosphere for my PhD program as well as for women. I served as the co-lead for the Human Centered Computing Student Seminar in Fall 2016. I designed and taught seminars about the academic job market, organizational systems and work management, and networking at conferences and professional events. I also organized events through Grad Women @ CC, a Georgia Tech group that organizes seminars, coffee breaks, and industry opportunities for women in the College of Computing. These communities support individuals where formal relationships through teaching end and provide the support to help women navigate academia.

For advising, I put students directly into real research projects from the start, no matter their prior research experience. This means bringing them into projects where their skills shine early, giving students "early wins" to encourage their excitement about research. I leverage their current knowledge to code, design, write, or conduct background research that have tangible outputs in publications. This approach also means leading by example in every project I supervise to develop their knowledge of how good research looks. I enjoy hands-on research with my students, guiding them through the study design and refinement of research questions, the data collection and analysis; and writing for scholarly audiences.

I have used this approach to great success with **mentoring ten students,** nine undergraduate and one Master's student. Each of these students came with different skillsets and progress in their degrees, ranging from an emergency medical technician to a machine learning specialist. No matter their skillsets, I teach these students the importance of rigorous computational research in machine learning and computational linguistics as well as the importance of interdisciplinarity in social computing research. These collaborations have led to publications with Zhiyuan (Jerry) Lin (now a Ph.D. student in CS at Stanford) [2, 3]; and Andrea Hu [4, 5, 6], a Master's student in CS. One of my undergraduates, Francisco Zampieri, wrote his honors thesis on opioid addiction with me, and an expanded version was published at CHI [5, 6]. At Northwestern, I have continued to work with undergraduates, and am building a small lab of students. Five of these students are from underrepresented backgrounds in computing. I now have a new group of undergraduate research assistants at Northwestern that I am looking forward to bringing through this process.

Future Courses

Given my interdisciplinary interests in computer science, my background prepares me to teach undergraduate and graduate courses within Human Computer Interaction, Computational Social Computing, and Applied Machine Learning. I am excited to design and rework current classes such as:

Social Computing, an advanced undergraduate/graduate course will teach computational methods for analyzing large-scale social datasets and social theory behind communities.

Human-centered Machine Learning and AI: a graduate-level seminar will examine the theoretical and methods foundations and current research for the new area of human-centered machine learning.

References

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[4] **Stevie Chancellor**, Andrea Hu, and Munmun De Choudhury. (2018). Norms Matter: Contrasting Social Support Around Behavior Change in Online Weight Loss Communities. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI).

[5] **Stevie Chancellor**, Francisco Zampieri, Andrea Hu, George Nitzburg, and Munmun De Choudhury. (2018). Analysis of Deviant Opioid Addiction Treatment Communities on Reddit [Poster]. Presented at "Social Media and Mental Health" Workshop at ICWSM.

[6] **Stevie Chancellor,** George Nitzburg, Andrea Hu, Francisco Zampieri, and Munmun De Choudhury. Discovering Alternative Treatments for Opioid Use Recovery in Social Media. At CHI.