Teaching Statement
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Teaching Philosophy: Teaching students to get them excited about science and research is one of the most appealing and impactful aspects of being an academic. I have experienced education as a student, teaching assistant, and lecturer in multiple universities and countries. I am also fortunate to have had exceptionally effective teachers such as Dan Klein, Richard Karp, Jitendra Malik, Pieter Abbeel, Line Mikkelsen, and Martin Wainwright, who would leave me impressed after every class with their passion for teaching and how they would explain a complex concept with such clarity. Inspired by my teachers and working first-hand with some of them as a teaching assistant, I have discovered the following principles that guide my approach to teaching.

First, an instructor should always think from the student’s perspective to devise the best way to explain a seemingly-complicated concept, e.g., by reducing it to its subproblems, and by clearly illustrating the connections to previously taught concepts. Peeling away the apparent complexity to reveal the core concept will help the student to successfully retain, recollect, reapply, and expand upon the idea, which is in fact the true purpose of learning. Second, collecting and incorporating feedback is critical. Engaging students early on and periodically via surveys and quizzes helps gauge their progress and understanding of the material. Office hours are a useful opportunity to individually work with students from unique and diverse backgrounds.

It is also essential to show the students connections of abstract topics to the real world via example applications and projects. This will both get them excited about the material and prepare them for future jobs, whether in research or in industry. For example, as a TA in the upper-division undergraduate artificial intelligence (AI) class at UC Berkeley, we had bonus assignments and competition leaderboards (on Pac-Man based projects) which encouraged the students to apply themselves beyond the minimum requirements. In the graduate-level natural language processing (NLP) class at Berkeley, there was a bonus for trying to achieve and go beyond the state-of-the-art in various core tasks, a very effective way to get students (including myself) engaged in research!

Teaching Experience: I have taught guest lectures and tutorials in various courses in multiple universities. I developed and delivered a tutorial (or short crash course) on ‘Topics, Trends, and Resources in NLP’ for the ‘Visual Recognition with Text’ multimodal AI course (by Sanja Fidler) at the University of Toronto in Winter 2015. I lectured in the ‘Computational Linguistics’ course (by John Goldsmith) at the University of Chicago in Spring 2015, and also in the Artificial Intelligence and Robotics class (by Matthew R. Walter) at TTI-Chicago/UChicago in Spring 2015.

I have also had two enriching teaching assistantship experiences. I was a TA for the ‘Introduction to Artificial Intelligence’ course (by Dan Klein) at UC Berkeley in Fall 2011, one of the largest-sized upper-division undergraduate classes, with more than 350 students among us seven TAs. In addition to leading discussion sections and holding office hours for 50 students, my responsibilities included designing and grading projects, assignments, and exams. I received an Outstanding Graduate Student Instructor Award from UC Berkeley.

I have also helped develop a new course on advanced undergraduate machine learning. I was the sole TA for the first-time offered ‘Advanced Topics in Artificial Intelligence’ course (by Pieter Abbeel, Dan Klein, and Jitendra Malik) at UC Berkeley in Spring 2009. My responsibilities again spanned the entire spectrum mentioned above, for the whole class of 30 advanced students.

Mentoring: Another truly exciting aspect of being an academic is mentoring enthusiastic students. In my two years as a research assistant professor at TTI-Chicago, I have been fortunate to advise or co-advise 12 great students and interns, from a diverse range of backgrounds, seniority (BS, MS, PhD), and universities. My students have come from UIUC, Georgia Tech, USC, UTexas, TTIC, UChicago,
UIC, Tsinghua (China), IIT (India), and UPC (Barcelona, Spain). I have advised projects of various durations, from 3 months to 18 months (and some with full-time students at TTIC). I have learned to select projects that students can complete and publish in a timely manner, but also to develop a thread of ideas that lead to longer-term impact. My students have been successful in converting their projects to publications in top-tier conferences and journals, and to multiple papers on a longer-term theme in some cases (six papers accepted, seven in submission, and a few latest ones in preparation). Multiple students have also gone on to join top graduate programs and NLP scientist positions.

My advising philosophy, again shaped by very effective mentors of my own, is similar to teaching. I try to explain the core idea from the student’s perspective. I always tailor my advising to suit the unique background and experience of each student. I strongly believe in a balanced approach to mentoring where I am always available to the student for questions and discussions (and have multiple meetings a week, as needed), but also encourage and assist them to gradually develop research independence and confidence, eventually leading the way with their own ideas.

Courses: I am very interested in building an undergraduate machine learning class, based on my experience in helping develop such a course at Berkeley. This would include several advanced topics that are essential for undergraduate students today but are not covered in a typical undergraduate AI curriculum, e.g., foundations of statistical learning theory, state-of-the-art classification algorithms, and methodologies in NLP, vision, and robotics applications. I would also like to teach various other courses, from introductory ones such as data structures and algorithms, to advanced classes on artificial intelligence, natural language processing, and information extraction. For graduate students, in addition to the aforementioned advanced topics, I am excited about creating new cross-modal AI classes, e.g., combining NLP with vision, robotics, and speech (and I am also happy to co-teach it with interested faculty from these other areas). Here, importantly, I will develop reading and writing groups, where students are encouraged to form interdisciplinary groups for reading papers and for writing code and research-level papers. I am also interested in teaching MOOC (online) versions of these classes.