# Teaching Statement

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Teaching and mentoring has long been a passion of mine. I find deep satisfaction in helping others learn and understand new concepts, and in aiding them in their personal development and helping them achieve their goals. On the other hand, I have also benefitted from many great teachers and mentors in my life, whose teaching and mentorship has had a great impact on the course of my life. In my deepest gratitude, I would love to pass down to my future students what I have learned from great teachers and mentors in my life, and hope to have a similar positive effect on them as well. This is the main reason I am applying for an academic job instead of joining an industry lab.

## Teaching Experience

Growing up in a family of high school teachers, I have witnessed how my parents changed the lives of many generations of students for the better over the decades. Following their example, I started to teach right after I started college. Every year during school vacations, I would visit my high school *alma mater* to teach participants of the national programming contest, as well as to host lectures and panels for the graduating class on college admissions and college life. In both cases, I designed the curriculum and plans, and delivered presentations to groups of 20–300 students. I was glad to see that our talks and panel discussions helped students from graduating classes broaden their horizon and reaffirm their dreams; I also found it extremely rewarding to see my students understanding and applying the algorithms I taught in my lectures. I was really proud when some of my students went on to study in some of the top universities in China partially thanks to my training. It was also around the same time, however, that I realized by spending time as a volunteer teacher in a remote mountain village that this positive impact of education is far from accessible to everyone. Ever since then, I have been seeking ways to make more positive impact through teaching.

At Stanford, I started my teaching career as a tutor for the Office of Accessible Education (OAE). Paired with a student who has learning difficulties unless the concept is explained highly visually, I learned a lot about different learning styles of different people as well as how to explain abstract concepts more intuitively. Tutoring for the OAE turned out to be a great learning experience for the student and myself, and I applied a lot of the things I learned to my later experience as a teaching assistant. I was a TA for four different CS classes during my time at Stanford, ranging from undergraduate introductory classes to graduate classes on advanced topics, with classes of 80 to 200 people. TAing has helped me gain valuable experience in creating effective teaching material, mentoring students during office hours, managing and working with a team of TAs, as well as designing talks and entire courses. In 2015, I was part of the teaching team that successfully launched CS224d *(Deep Learning for Natural Language Processing)* for the first time at Stanford, a large part of which serves as the basis of the now well-known CS224n class by the same title. We created all assignment and exam materials from scratch, which not only required careful designing of the assignments, but also involved us adjusting materials, content, and format with student feedback as the course progressed. Having participated in the creation of a course from scratch as well as the reincarnation of a few others, I am confident that I am able to teach and manage my own classes effectively.

## Teaching Plans and Philosophy

I am prepared and excited to teach *undergraduate- and graduate-level courses*, and I am enthusiastic about teaching courses on topics such as *natural language processing, deep learning, machine learning, and artificial intelligence*. I am also interested in teaching seminars or courses on advanced topics in research areas that are related to my own research.

I would like to incorporate the following considerations into my teaching, which I have learned from many great teachers and mentors as well as my own teaching experience over the years:

**Accessible Content.** Every student processes and digests course content in different ways, thus it is important to make sure the content is presented in as many ways as possible. I will present my courses with intuitive illustrations and explanations without losing technical rigor and depth whenever possible. I will also highlight the connection between different concepts, as exposure to the same concept from different aspects usually helps deepen understanding.

**Inclusive Environment.** Creating an environment where everyone feels a sense of belonging matters. I will pay close attention to create course materials that take into account and represent different cultural and socioeconomic

backgrounds as well as identities. I also want to recognize that different students are comfortable with different means of interaction, and accommodate them to the best of my ability.

**Openness First.** I think openness is key to great teaching, both in terms of openness to feedback and openness for broader access. I would like to follow great examples like Stanford's CS224n and share my teaching materials publicly to the fullest extent possible. This will not only allow more people equal access to education, but also provide me with the opportunity to serve my students better.

**Form *and* Function.** I believe that since computer science is an engineering subject, hands-on experience is irreplaceable in teaching. Therefore, I would like to stress the importance of students' actually implementing functions and systems by themselves, by incorporating well-designed programming assignments as well as course projects. In the meantime, I think the "form" or appearance of programming assignments is often neglected, especially in subjects that are not traditionally related to graphics or robotics. I would love to spend some of my time on better visualizing intermediate results, so students can better reason about these abstract concepts as well as feel their time is being respected.

**Teach Cutting-edge Research.** It is important that education prepares our future generation for the challenges they will face, so I believe it is crucial that my courses teach cutting-edge research developments whenever appropriate. This will not only ready them for the research or engineering endeavors they want to pursue, but also help the entire research community acquire new blood and new ideas more efficiently.

## Research Mentoring

During my time as a Ph.D. student at Stanford, I have been fortunate to have the opportunity to mentor undergraduate and master students, as well as collaborate with junior and senior Ph.D. students in various research projects. When mentoring more junior students, I meet them regularly to discuss research ideas and progress, help them through technical obstacles, brainstorm ideas for next steps, and help them plan out experiments and comparisons as concrete goals. A few of the projects I mentored were fortunate enough to be selected Best Course Projects, and some students even chose to continue working with me after the class is finished to develop their project into research papers. When collaborating with my peers, I have learned to always provide constructive suggestions alongside critiques/comments, focusing on general methods or directions our work can be improved, rather than always fixing problems without communicating.

Learning from great mentors I have worked with, I would like to form a close working relationship with my future students as *colleagues*, rather than just mentor/student. I believe it is important that they are recognized as young scholars to not only build self-confidence, but also help them develop independent research agendas. I also recognize that different advising styles work for different people, and am willing to adapt to the needs of individual students. I believe the range of my mentoring and collaboration experience has well prepared me for this challenge. Regardless of advising style, I would focus my mentorship not just on the work at hand, but also continuously invest in my students' personal growth. The journey of research is never devoid of frustrations and failures. I strive to provide guidance and support to my future students, and make sure they are able to enjoy research as much as I do. Last but not least, I pledge to heavily invest in building a community for my students, as well as larger communities among different research labs with shared research interest should it be desired. Coming from a group with a strong community, I have witnessed the organic discussions, collaborations, and support it has created among students and faculty. I would love to create the same environment for my future students, community, and department as well.