Teaching Statement

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Teaching is an integral component of a faculty job. I have had enormous help from my past mentors, and they inspire me to pursue teaching as my career. In this statement, I will describe my past teaching experiences and teaching interests.

Teaching experiences My teaching experiences range from entry-level courses to graduate ones. At the University of Wisconsin-Madison (UW-M), I served as teaching assistants for introductory programming courses with around 300 enrollments, most of which are non-CS major. My responsibilities were office hours, grading, and lab hours for about 50 students. I also served as teaching assistants to an upper-year algorithms course and an introductory complexity course at UW-M. One lesson I learned from these exposures is that patience is very important, especially when interacting with non-CS students who might have been exposed to computer science for the first time.

In Fall 2016, I taught “Advanced Combinatorics” as the instructor at Queen Mary, University of London (QMUL), which is a graduate course with about ten enrollments. I lead both the lectures and tutorial sessions. This experience challenges me to teach topics that I am not perfectly familiar with, and it broadened my horizons. The syllabus is flexible and I developed my own version, incorporating some of the most recent developments from probabilistic and extremal combinatorics into the class. In addition, I have organized and taught informal mini-courses in UW-M and Peking University (PKU) on Markov chains and computational complexity.

Teaching philosophy Problem solving plays a crucial role in computer science. It is thus important to let the students get familiar with how to solve problems. As a teacher I want to convey the intuition leading towards the solution, rather than merely presenting the solution itself. My goal is to make sure that the students are able to utilize techniques they learned during the class to solve new problems. For example, in my combinatorics class at QMUL, I regularly encourage students to make attempts on problems, and then help them to fix potential issues or guide them towards the right answer.

Mentorship One unique aspect of a faculty job is the opportunity to interact with students from all levels. Indeed, I find working with junior researchers very gratifying and rewarding. In UW-M, I have been working with younger graduate students, Aaron Gorenstein and Tianyu Liu. While I was in the University of California-Berkeley (UC-B), I have been working with Jingcheng Liu, a first-year graduate student. The outcome of these collaborations has turned into submissions to major conferences. During these collaborations, my knowledge helps, but more importantly I can demonstrate the way of thinking while tackling new problems. For advising students, another goal of mine is
to help them to grow up into independent researchers. This is beneficial in both ways — surprising and enticing new ideas often come from fresh minds.

**Teaching interests**  My teaching experiences and research background make me well-suited to teach classes related to theoretical computer science, including algorithms, computational complexity, and discrete math. I am glad to run and develop new research level topics courses. In the meanwhile I welcome the challenge of teaching a wider range of topics and I am avid to expand the scope of my knowledge. I am also looking forward to supervising research projects.