Teaching Statement

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Being a teacher captured my interest after I taught undergraduate courses as an instructor three times. Before this experience, I viewed teaching as a mandatory task for a graduate student rather than a meaningful endeavor. Teaching a course as an instructor, I had more opportunities to communicate deeply with students and learn about their interests and goals. I was glad to know that one student successfully applied the Chi-square test introduced in class to her bioscience experiment, and another student, passionate about classical music, wanted to take my class to build a statistical foundation for future research in music analysis. These interactions helped me realize that the classroom is a platform for imparting knowledge to students from diverse backgrounds. For now, the teaching process is exciting and deeply rewarding for me. As a teacher, I am responsible for fostering a comfortable and inclusive learning environment where all students can grow. Meanwhile, I feel a deep sense of happiness when I help students resolve their confusion and accumulate knowledge. In the following parts, I will share my teaching experience, philosophy, and interests, emphasizing how I strive to inspire and support my students in their learning processes. I eagerly look forward to teaching and advising students as my life-long career.

Teaching Experience

`1. Teaching Assistant.` I have been a teaching assistant (TA) for undergraduate and graduate courses ranging from diverse topics such as *Introduction to Probability*, *Introduction to Stochastic Processes*, *Introduction to Mathematical Statistics*, *Introduction to Numerical Analysis*, *Exploratory Data Analysis and Inference with R* and *Time series analysis*. My responsibilities primarily included leading oral discussion sections where I helped students review course materials and guided them through exercises. I also held office hours to answer students' questions. Additionally, I served as a year-round Lab TA for an introductory-level probability and statistics course. In this role, I instructed over 500 students on performing data analysis using the statistical software Minitab.
`2. Associate Instructor.` I have been an associate instructor for undergraduate courses three times, teaching *Calculus* and *Calculus-Based Introductory Probability and Statistics*. Notably, two of these courses had large enrollments of around 200 students. My responsibilities included setting up the courses from scratch, coordinating with TAs, delivering lectures, holding office hours, and ensuring that students' learning activities proceeded smoothly.

Teaching Philosophy

My high-level teaching philosophy is inspired by sayings from an ancient Chinese philosophical text:

> *To teach with no discrimination. To teach in line with the student's aptitude.*
>
> —*The Analects*

More specifically, I realize several aspects are important to support students' learning:

1. `Create a comfortable learning environment.` I understand that the classroom can be intimidating for students, especially for freshmen. Therefore, my first teaching philosophy is to create a comfortable learning atmosphere. At the start of the first class, I introduce myself and

give students five minutes to chat with their neighbors and let them find common interests. I believe this designed activity can alleviate students' stress and help them feel a sense of belonging. Besides, I always attempt to stimulate interactions with students through humor and real-world problems, e.g., I checked the birthday paradox in class with students. These approaches have made a positive impact on my students; one mentioned in the course review that "The instructor had a very kind and approachable attitude that made me feel welcomed during lectures."; while another said, "Kejin always made sure everyone understood what he was asking and made everyone feel that they are included."

2. `Learn and support the needs of students.` In my view, the major responsibility of a teacher is to transmit knowledge and experience to students and brighten their future. Therefore, it is essential to understand their needs. For each course where I serve as an associate instructor, I conduct a pre-course survey to assess students' backgrounds, learning goals, and concerns. The survey results guide me in adjusting the course design accordingly. I recognize that undergraduate students in introductory-level statistics courses often come from diverse backgrounds and have varying levels of mathematical foundation. As a result, I regularly pause to ask for students' feedback and encourage questions during each lecture. I also welcome students to schedule appointments with me if they have questions and cannot attend my regular office hours. One student commented "He helped me understand the material by going through the course content knowing that some students haven't taken statistics before. He went slow and made sure that all the details were explained as well as asking for any questions before moving on to the next topic."

3. `Motivate students to think actively.` Beyond delivering the essential knowledge outlined in the course syllabus, I believe that every student has innate potential and can explore beyond the course materials. One way to achieve this is by motivating them to think actively rather than learning passively. I often expand the course materials appropriately to give students opportunities to think critically. For example, when introducing least squares estimation in simple linear regression, I asked students what would happen if the loss function were the sum of absolute loss terms rather than squared terms. I further asked them what would happen if we considered interpolating all points by a smooth curve rather than relying on a straight line. Although these questions go beyond the scope of introductory-level statistics courses, they encourage students to think critically and provide them with a broader perspective on mathematics and statistics. Additionally, I consistently lead students to find answers to their questions by themselves. I trust that these approaches help students think actively and enhance their learning, as noted in a comment from a student "I believe this class rekindled my interest in statistics, while I found the class to be extremely hard as the topic is one of my weaknesses, things got better the more I understood the reason behind performing statistical analyses."

Teaching Interests

I thoroughly enjoy the process of teaching and imparting knowledge. After accumulating teaching skills and experiences from guiding undergraduates and graduate students across various courses, I am well-prepared to teach undergraduate courses on any topics related to statistics and probability. I will keep creating a comfortable learning environment for undergraduates with different backgrounds and motivating them to think actively during class. On the other hand, I am interested in teaching graduate courses, e.g., graduate-level mathematical statistics. I am also particularly eager to teach graduate courses in areas related to my research interests, such as time series analysis, bootstrap/subsampling, and their real-world applications in prediction.