

Teaching Statement

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Teaching Experience

As a postdoctoral researcher at UC Davis, I have served as an instructor and given lectures to diverse student populations that present unique challenges. I particularly enjoy teaching because it allows me to engage with students from different backgrounds, adapt my approach to their varied learning styles, and foster an inclusive environment where all students can thrive.

STA131B: Mathematical Statistics:

In the Spring quarter of 2024, I was the instructor in charge of STA131B: Mathematical Statistics, an upper-level undergraduate course designed for statistics majors and related areas. The course covered a variety of topics, including methods of estimation, sampling distributions, Fisher information, and interval estimation. My goal was to help students understand the statistical concepts underlying the theoretical foundations of statistical methods. To achieve this, I used many examples and applications to illustrate statistical methods and abstract concepts. I always aim to make students feel encouraged, regardless of their backgrounds, and this effort has been reflected in positive feedback from students, with a teaching evaluation score of **4.71 out of 5.00**.

STA100: Applied Statistics for Biological Sciences:

I was also the instructor in charge of STA100: Applied Statistics for Biological Sciences in Summer Session I of 2024. Unlike STA131B, STA100 is a lower-level undergraduate course designed for biological science students, many of whom are pre-med and may have apprehensions about math. The course emphasized application, utilizing statistical software to analyze real data, solve problems, and understand statistical concepts. I focused on making statistical concepts accessible and relevant to their field by incorporating biological data sets into assignments and classroom examples, illustrating how statistical analysis is integral to biological research. This approach fostered a relaxed and supportive learning environment, as reflected by a teaching evaluation score of **4.67 out of 5.00**.

In addition to my role as an instructor at UC Davis, I served as a teaching assistant for several math courses during my Ph.D. at Peking University. I led discussion sessions for both advanced courses, such as **Advanced Linear Algebra I** and **II**, and introductory courses, like **Calculus B** and **Linear Algebra**, focusing on exercises and key concepts. To support students seeking deeper understanding, I also incorporated advanced material relevant to their future studies.

Courses of Interests

I am excited to teach a wide range of undergraduate and graduate courses, spanning from introductory to advanced levels, in statistics, probability, mathematics, machine learning and programming (R, Python and MATLAB). I am well-equipped and enthusiastic about teaching both theoretical and applied topics, including time series, statistical learning, algorithms, and other statistical methodologies.

Teaching Philosophy

In my teaching approach, I emphasize *developing critical thinking skills* in my students. I believe education goes beyond memorizing formulas and methods; it is about equipping learners to navigate complex problems, identify patterns, and make informed decisions based on data and logical reasoning. This philosophy shapes my teaching, assessment methods, and communication with students, all with the goal of fostering independent thinkers and effective problem solvers.

Creating an inclusive classroom culture Creating an inclusive classroom environment is the

cornerstone of my teaching philosophy. I aim to create a space where all students feel valued, respected, and empowered to participate fully, regardless of their background, abilities, or perspectives. While teaching at UC Davis, I had students from diverse backgrounds with varying abilities and ways of thinking. I am always patient with every question, explaining concepts repeatedly until the student fully understands. My goal is to create an atmosphere where every student feels heard and capable of succeeding.

Encouraging open dialogue and communication I place a strong emphasis on conversation and reflection as essential parts of the learning process. In my classes, students are encouraged to articulate their thought processes, engage in debates with peers, and critically evaluate the validity of their solutions. Beyond the classroom, I value maintaining open lines of communication with my students. Recognizing that learning extends beyond scheduled sessions, I encourage students to reach out with questions or for clarification via email, ensuring they feel supported throughout their learning journey. Additionally, I actively welcome feedback on all aspects of my teaching. This approach reflects my dedication to delivering high-quality education and my commitment to fostering both intellectual and personal growth in my students.

Integrating mathematical tools with statistical thinking In teaching statistics, I emphasize the interplay between mathematical tools and statistical reasoning. Mathematical tools provide the rigor and precision needed for analytical exploration, while statistical thinking offers a framework for understanding variability, managing uncertainty, and drawing data-driven conclusions. By integrating theoretical concepts with practical applications, I help students confidently apply mathematical tools while cultivating the critical mindset that statistical thinking demands. This balanced approach not only equips students to solve structured textbook problems but also prepares them to address complex, real-world challenges where solutions are not straightforward. This approach helps them face academic and career challenges with a solid and adaptable understanding of mathematics and statistics.

Highlighted Student Feedback

1. *This is a very good professor, with a deep knowledge in statistics, clearly presented materials, clear demonstration of solving problems, and a fully awareness regarding what is in the scope of this course and what is not. By far, it is one of the best instructors I have faced in this university. Please do let him teach more student here.* – student from STA131B
2. *It was Prof. Zhou's first time teaching a course in the United States. He presented in an organized fashion. It was evident that he strived to ensure that we understood the material. He was very receptive to feedback and questions, and was responsive on Piazza. I emphasize again, he really tried. The midterms were representative of the homework. In lecture, he made comments on what was in the scope of graduate study.* – student from STA131B
3. *Fantastic professor. Brilliant and approachable.* – student from STA131B
4. *Amazing prof, very smart and helpful.* – student from STA131B
5. *Professor Hang Zhou is a very fair professor who deeply cares about his students !* – student from STA100
6. *Cares very much about his students success and learning progress. Right off the bat, he is already setting up his students for success because of the homework and extra credit quizzes. I was thankful that his quizzes are straightforward and not too hard.* – student from STA100
7. *I feel that Professor Zhou was an excellent professor. He was passionate and knowledgeable about the subject. The only thing that I think would help me in my learning experience is adding more examples to lecture notes when giving definitions of certain concepts.* – student from STA100
8. *Hang Zhou shows a great understanding of statistics and really makes sure that we understand what is required from his students. He is also extremely kind and was very understanding for issues that I was having with class content.* – student from STA100