Teaching Statement

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I am fortunate to have met many great teachers—my high school Physics teacher ignited my passion in science; my college advisor guided me into my professional field; my PhD advisors shaped my attitude to research and life. It is their tremendous impact on me that motivates me to pursue a career as a professor. I am excited to **inspire young minds in pursuing their professions** and **share my passion in AI and music with students**.

Teaching Experience

Computer science. During my PhD study at UC San Diego, I worked with three professors as a teaching assistant for four computer science courses—*Introduction to Machine Learning* (CSE 151A), *Principles of Machine Learning: Learning Algorithms* (CSE 251A), *Recommender Systems & Web Mining* (CSE 258) and *Topics in CSE: Advanced Statistical NLP* (CSE 291). I was responsible for teaching discussion sections, holding weekly office hours, grading assignments and handling questions and discussions on Piazza. I gradually realized that the goal of a teacher is more about guiding students in their learning than pouring knowledge into their minds. In particular, I was amazed by how active and passionate a student can become when they found something they care about to work on for their term project. With the efforts I devoted into teaching, my performance was recognized by **100% recommendations** and **75% strong recommendations** from the anonymous evaluations made by the students collected over the four courses.

Mentoring. I have been mentoring three graduate and one undergraduate student on their research projects. I meet regularly with each student to discuss and provide advice on their research progress. Notably, **one of my mentees has recently had her first-authored paper accepted IEEE Big Data Workshop on AI Music Generation**. Moreover, I have been serving as a mentor in the NSF-funded Early Research Scholars Program (ERSP) at UC San Diego, where I am responsible for mentoring three sophomore students to pursue a research project as a group. I have also been participating in the mentoring programs of Women in Music Information Retrieval (WiMIR) and the project Tyra (Taiwanese Young Researcher Association). I meet regularly with my mentees and provide advice on topics such as choosing a career in academia or industry, applying to graduate schools, handling work-life balance and making connections at conferences. The joy of working with students and watching their growth is what motivates me the most to pursue a career as a professor.

Tutorial on music generation. In 2019, I gave a 1.5-hour tutorial on music generation research at the International Society of Music Information Retrieval Conference (ISMIR), the top conference in the field of music information research. I developed all content from scratch and prepared a hands-on session for the audience to play with the latest music generation models using Google Colab. This tutorial **attracted more than 200 participants** and was the most popular tutorial in the morning section. This experience equipped me with the ability to develop new course content from scratch.

Middle school math and college choir singing. During my junior year, I was a teacher for the AMC 8 Training Camp at Kang Chiao International School, where I designed and taught 2-hour weekly math classes for six middle school students. Moreover, I was the student conductor for the NTUChorus where I led 1.5-hour weekly rehearsals for two semesters. In the weekly rehearsals, I taught choral singing techniques to beginners and rehearsed the pieces for our biannual concerts at the Taiwan National Concert Hall. Through this experience, I learned to interact with students from diverse backgrounds and tailor my teaching strategy according to their proficiency of the content.

Teaching Philosophy and Methodology

I strongly believe that the utmost goal of a teacher is to *ignite students' passion and guide them through the journey of learning a subject*. Rather than pouring knowledge into their minds, a good teacher inspires their students and equips them with the ability to actively seek knowledge beyond what has been taught in the lectures. In our rapidly-evolving field, the ability to learn independently is crucial for a student to succeed in their future career. With this belief in *active learning*, I have developed my teaching methodology through my teaching experience and applied it in my discussion sections and office hours.

First, I put *extra emphasis on sketching the big picture* on top of technical contents. In my office hours, students often come to me expressing how they get lost in all the math derivations in the lectures. I always revisit and explain the bigger picture before diving into the maths. Similarly, I start my lectures and talks by placing the topic in a larger context and providing an overview of the key concepts. Throughout the lecture or talk, I point back to the big picture frequently so that students will not get lost in technical details. I find this approach helpful for students to navigate the course content and further explore beyond material that has been taught.

Second, I believe *learning is more effective through practicing*. When I served as a teaching assistant for *Recommender Systems & Web Mining* (CSE 258) and *Topics in CSE: Advanced Statistical NLP* (CSE 291), many students came to my office hours regularly to discuss their final projects, an essential component of the course. Instead of directly instructing them what to do next, I threw meaningful questions to guide them thinking. Before I started debugging a program with the students, I taught them how to effectively debug a program and find useful resources online. Through working with the students over the semester, I realized that the students had learned to actively seek knowledge rather than passively awaiting instructions.

Finally, I *think backward from the perspectives of students*. When preparing a lecture, I ask myself what the students should understand after a lecture. During office hours, I think about how I can best support their learning with all the resources I know. When grading assignments, I focus on why the student has made a mistake and provide constructive feedback to help them learn the associated concepts. I find this approach helpful for me to stay focused on the student's need and tailor my teaching strategy accordingly.

Teaching Interests

I am particularly eager to teach courses that are directly related to my research directions, including *Deep Learning*, *Machine Learning*, *Computer Music* and *Audio Signal Processing*. With my teaching and research experience, I am also prepared to teach introductory courses such as *Artificial Intelligence*, *Signal Processing* and *Digital Signal Processing*. Moreover, I am interested in developing new courses such as *"Machine Learning for Music and Audio"*, *"Generative and Creative AI"* and *"Intelligent Music and Audio Production"*.