TEACHING STATEMENT

1. Teaching Philosophy

Teaching Philosophy In today's rapidly evolving technological landscape, my teaching philosophy extends beyond merely imparting knowledge — it aims to optimize the process of knowledge transfer, making it as dynamic and engaging as the technology itself. Education should not only inform but inspire, requiring methods that capture students' interest and stimulate their engagement.

My approach to teaching is shaped by my diverse experiences, where I've employed various strategies to motivate and involve students. For instance, during my tenure at a consulting and teaching institute in Nanjing, I introduced intentional errors into my lectures. This technique encouraged students to participate and corrected mistakes, fostering a comfortable environment for open dialogue and active learning. Similarly, I used incentives like ice cream treats to reward students who posed thought-provoking questions, significantly enhancing classroom interaction and deepening their understanding of the subject matter.

This philosophy was further developed during my time at the University of Singapore, particularly in the course "Marketing of High-technology Products and Innovations." Here, I worked with MBA students, many of whom held mid-level managerial positions and brought a wealth of professional experience into the classroom. Their practical approach to learning challenged me to integrate real-world applications with theoretical concepts. To bridge this gap, I adjusted my teaching style to not only answer immediate practical questions but also to encourage a deeper exploration of underlying theories and principles. This dual focus helped students apply their new knowledge directly to workplace challenges, enriching their learning experience and providing them with tangible skills.

Embracing modern technological tools, I have also incorporated artificial intelligence into my teaching toolkit. A prime example is the development a GPT tool (link). This tool acts as a virtual teaching assistant, offering students interactive, personalized learning experiences outside traditional classroom settings. It offers theoretical knowledge, coding guidance, and even research insights in data analytics and optimization, with a special focus on robust analytics. I regularly update it with my latest research and insights to ensure it remains a valuable and current resource, providing students with a dynamic and interactive learning environment.

My teaching philosophy is to create an environment where technology enhances the learning process, making it interactive, adaptable, and above all, inspiring. Through a blend of traditional teaching methods and innovative technological tools, I aim to foster not only comprehension but also a genuine enthusiasm for learning.

2. Potential Teaching Goals

Despite my primary teaching experience in management courses at the National University of Singapore, I possess a versatile skill set that equips me to instruct a wide array of courses in machine learning, statistics, optimization, and operations management. To this end, I propose introducing a graduate-level course about *Data-driven Analytics*.

This course aims to immerse students in advanced methodologies of data-driven analytics. Structurally, it will be divided into two primary segments: (1) Preliminaries: This part will provide a comprehensive introduction to stochastic programming, robust optimization, and machine learning models; (2) Advanced Analytics: Building upon the foundational concepts, this part will delve into data-driven optimization models (e.g., distributionally robust model), asymptotic and non-asymptotic analysis, and recent advancements in predictive and prescriptive analytics, as well as other tools in contemporary literature. An auxiliary focus of the course will be on behavioral analytics. This will involve exploring how human behavioral patterns can be discerned from data and subsequently integrated with machine learning or optimization models to facilitate decision-making processes.

The overarching goal of this course is threefold: (1) To equip students with a comprehensive set of analytical tools essential for both academic and industry pursuits; (2) To provide a solid grounding in state-of-the-art research methodologies and insights; (3) To ignite students' passion and curiosity in the rapidly evolving realm of analytics.

3. Advising Students

My approach to student advisement has been deeply influenced by my own experiences working under Prof. Melvyn Sim, who was not only a mentor but also a friend throughout my PhD and postdoctoral studies. His mentoring style is uniquely inspiring, as he genuinely cares about the personal and professional growth of his students. He encouraged me to pursue my interests vigorously, fostering an environment where exploration and deep inquiry were always encouraged.

Prof. Sim consistently set high standards for both himself and his students, pushing us to undertake work that has significant potential and impact. This ethos has instilled in me a drive to aspire for excellence in my own research, motivating students to reach beyond conventional boundaries. Moreover, he engaged with us in a manner that can best be described as intellectually competitive. He encouraged us to critically analyze and challenge established research, including his own contributions. This dynamic pushed me to sharpen my critical thinking skills and question the status quo, a practice I would strive to pass on to my students in the future. It is this kind of rigorous scholarly debate that I believe cultivates a resilient and innovative research mindset.

Throughout my doctoral studies, I also received comprehensive training in supervising students and assumed a leadership role within our research group, which comprised over 20 Ph.D. candidates. I spearheaded group meetings, facilitated knowledge-sharing sessions on graduate-level topics, and fostered discussions on cutting-edge research ideas. A key instance of my advisory role was during the collaborative development of my second AI paper on backdoor attacks, involving two junior group members. Building on my initial work on deep learning adversarial attacks, I guided these students through the design and execution of experiments and played a crucial role in the final compilation of the paper.