

Teaching Statement

Lin Ling

I genuinely enjoy teaching, mentoring, and conveying knowledge. I like the challenge of decomposing a complex concept into digestible but connected pieces to make it accessible. The possibility of passing on my experience and expertise to my students and guiding them to start their own careers is a joy that attracts me to academia.

1 Past Teaching Experience

During my Ph.D. I served as TA on a graduate-level course (*Convex Optimization*) and a few undergraduate courses including *Data Structure and Algorithms*, *Computer Organization* and *Artificial Intelligence*. My duties include delivering tutorials as well as designing and grading assignments.

Apart from university teaching, I also have extensive experience in engaging K-12 students. I have provided mathematics and AI training to students from the Singapore International School and over one hundred primary students from China. In 2020, I worked as an instructor to teach python programming to thirty local high school students from the Hong Kong Academy for Gifted Education (HKAGE). I volunteered to be a mentor at the annual Julia Robinson Mathematics Festival in the past three years to guide students at various levels through challenging mathematics puzzles.

2 Teaching Plan

With my background in optimization theory, information theory, and machine learning, the following non-exhaustive list shows the courses I can teach:

1. Data Structures and Algorithms (Undergraduate)
2. Computer Organization (Undergraduate)
3. Linear Algebra (Undergraduate)
4. Computer Programming in C and Python (Undergraduate)
5. Convex Optimization Theory and Applications (Undergraduate and Graduate)
6. Linear and Non-linear optimization (Graduate)
7. Introduction to Information Theory (Undergraduate)
8. Introduction to Artificial Intelligence (Undergraduate)
9. Machine Learning (Undergraduate and Graduate)

From my own teaching and learning experience, I feel that the most effective learning occurs when the instructor connects the theory with its latest applications, and I plan to adopt this philosophy when designing and teaching my own courses. I believe this way of teaching better motivates students to learn the abstract theory, and it exposes the students to the latest research problems.