# Teaching Statement
# Ching Nam Hang

Teaching is a fundamental element of my intended academic career path. The opportunity to impart knowledge to students at different stages, from freshmen to advanced graduate students, is a compelling aspect that draws me towards academia over industry research labs. In my perspective, effective teaching should focus on providing a thorough understanding of essential concepts and emphasizing core methodologies. Integrating industry-related topics, some drawn from my own professional experience, can foster a stronger connection between theory and practice.

During my Ph.D. (2019-2023), I fulfilled the role of a Teaching Assistant for several courses. In particular, I facilitated lessons for undergraduate courses, including *Introduction to Computer Studies* and *Artificial Intelligence: Past, Present, Future*. As I progressed to become a senior Ph.D. student, I also instructed a graduate course entitled *Convex Optimization and its Applications in Computer Science*. My responsibilities encompassed delivering tutorials and designing and grading assignments.

With my academic background in data science, machine learning, optimization theory, AI, and software programming, I am equipped to teach a broad spectrum of courses, including but not limited to:

1. Problem Solving and Computer Programming (Undergraduate)
2. Fundamentals of Data Science (Undergraduate)
3. Data Structures for Data Science (Undergraduate)
4. Data-Intensive Computing (Undergraduate)
5. Trustworthy AI in Healthcare (Undergraduate and Graduate)
6. Artificial Intelligence (Undergraduate and Graduate)
7. Machine Learning (Undergraduate and Graduate)
8. Introduction to Convex Optimization Theory and Applications (Undergraduate and Graduate)

Engaging undergraduates with research activities and direct interaction with faculty members is a crucial component of the teaching experience. I am eager to involve undergraduate students in summer research projects and encourage semester-long independent studies. I am also interested in designing new courses collaboratively with university faculty. Given the opportunity, I would be keen to develop a graduate course on AI in healthcare and a research seminar on automated machine learning with an emphasis on implementation and implications of Trustworthy AI in healthcare.

My teaching experience extends beyond the university setting, having extensively engaged with K-12 students. I have provided mathematics and artificial intelligence (AI) training to students from the Singapore International School (Hong Kong) and over a hundred primary students from China. I also served as an instructor, teaching Python programming to local high school students at the Hong Kong Academy for Gifted Education (HKAGE). Additionally, I taught Python programming to gifted middle and high school students through a project supported by the Gifted Education Fund from the Education Bureau of Hong Kong. As a volunteer at the annual Julia Robinson Mathematics Festival in Hong Kong from 2017 to 2019, I guided students at various levels through challenging mathematical puzzles.

In addition to my teaching roles at the university, I gained entrepreneurship experience during my Ph.D. studies through managing a tech startup that specializes in AI-driven solutions for ed-tech. As a co-founder of a tech startup supported by the Hong Kong Science and Technology Parks Corporation (HKSTP), I am well-equipped not only to teach a relevant course on Technology Entrepreneurship, similar to the course *CS183: Startup* at Stanford University taught by Peter Thiel, but also to serve as a mentor for undergraduate students in tech entrepreneurship. Leveraging my five years of experience with the Technology Start-up Support Scheme for Universities (TSSSU) grant under the Innovation and Technology Fund (ITF) and the HKSTP incubation programme, I can effectively coach students to become university startup founders. Additionally, the startup successfully hosted project-based virtual summer internships for two years, allowing me to mentor and work alongside over forty undergraduate students from Princeton University on various projects.