



Department of  
Systems Engineering

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# First-order methods for bilevel optimization



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**6 November 2024 (Wed) | 10:30 am**

**Seminar Link:** <https://cityu.zoom.us/j/82250300946>

## Abstract

Bilevel optimization, also known as two-level optimization, is an important branch of mathematical optimization. It has found applications across various domains, including economics, logistics, supply chain, transportation, engineering design, and machine learning. In this talk, we will present first-order methods for solving a class of bilevel optimization problems using either single or sequential minimax optimization schemes. We will also discuss the first-order operation complexity of these methods and present preliminary numerical results to illustrate their performance.

## About the Speaker

I am a Ph.D. candidate in the Department of Industrial and Systems Engineering at the University of Minnesota, advised by Dr. Zhaosong Lu. I completed my undergraduate study in the School of the Gifted Young at the University of Science and Technology of China and obtained a B.S. degree in Mathematics in 2020. My research interests lie in algorithm design and analysis for bilevel, minimax, stochastic, distributed, and online optimization, with applications in data science, AI/machine learning, and decision-making under uncertainty.