

Design and Analysis of Modern Experiments

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Abstract

Traditional design and analysis of experiments have been popular in many industrial applications and field studies in the past decades, but they are inadequate to provide efficient experimentations nowadays in the era of big data analytics and artificial intelligence. In this seminar, we first briefly review the basics of the design and analysis of experiments and point out their limitations towards modern experiments due to their frameworks and underlying assumptions. Then we will introduce several advanced design and analysis methods for modern experiments developed by our research group in the past few years, and discuss how these advanced methods fulfill the specific needs and requirements in designing and analyzing these modern experiments. In this talk, we will cover modern experiments on social networks and the Internet, order-of-addition experiments for clinical trials and industrial processes, and possibly some others.