Mathematics, Statistics, and Computer Science    **@ UIC**

# Statistics and Data Science Seminar

*On I-Optimal Designs for Generalized Linear Models: An Efficient Algorithm via General Equivalence Theory*

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**Abstract:** The generalized linear model plays an important role in statistical analysis and the related design issues are undoubtedly challenging. The state-of-the-art works mostly apply to design criteria on the estimates of regression coefficients. It is of importance to study optimal designs for generalized linear models, especially on the prediction aspects.

In this talk, I will discuss a prediction-oriented design criterion, I-optimality, and how we develop an efficient sequential algorithm of constructing I-optimal designs for generalized linear models. Through establishing the General Equivalence Theorem of the I-optimality for generalized linear models, an insightful understanding is obtained for the proposed algorithm on how to sequentially choose the support points and update the weights of support points of the design. The proposed algorithm is computationally efficient with guaranteed convergence property. Numerical examples are conducted to evaluate the feasibility and computational efficiency of the proposed algorithm.

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| Wednesday, March 14 at 4:00 PM in SEO 636 |