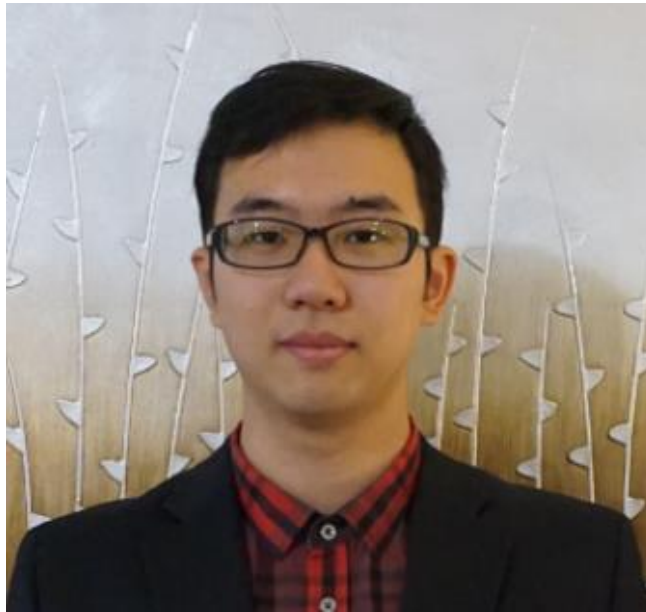


## Department of Management Science and Statistics Research Seminar

Cordially invites you to the talk by



**Dr. Xuan Bi**

Assistant Professor  
Departments of Information & Decision Sciences

**Carlson School of Management  
University of Minnesota**

Friday, Sept. 30, 2022, 2-3pm CST

Meeting URL: <https://utsa.zoom.us/j/5826540450>  
Meeting ID: 582 654 0450  
One tap mobile: +13462487799,,5826540450# US (Houston)

## ***“Distribution-invariant differential privacy”***

### **Abstract**

*Differential privacy is becoming one gold standard for protecting the privacy of publicly shared data. It has been widely used in biomedical sciences, data science, public health, information technology, and the U.S. decennial census. Nevertheless, to guarantee differential privacy, existing methods may unavoidably alter the conclusion of original data analysis, as privatization often changes the sample distribution. This phenomenon is known as the trade-off between privacy protection and statistical accuracy. In this work, we mitigate this trade-off by developing a distribution-invariant privatization (DIP) method to reconcile both high statistical accuracy and strict differential privacy. As a result, any downstream statistical or machine learning task yields essentially the same conclusion as if one used the original data. Numerically, under the same strictness of privacy protection, DIP achieves superior statistical accuracy across a wide range of simulation studies and real-world benchmarks.*

### **Short Bio**

Dr. Xuan Bi is an Assistant Professor of Information and Decision Sciences in the Carlson School of Management at the University of Minnesota. His research mainly revolves around recommender systems and data privacy. Dr. Xuan Bi holds a Ph.D. in Statistics from the University of Illinois at Urbana-Champaign. Prior to joining the University of Minnesota, Dr. Xuan Bi was a Postdoctoral Associate at Yale University.