



**IEEE**

*Leveraging Technology for a  
Better Tomorrow*

**April 26, Friday, 2024, 6~ 7:30PM**

**at Long Island University, Brooklyn Campus, New York City  
Health Sciences Building Room HS 119  
IEEE Student Branch at LIU-Brooklyn Campus, New York City**

**Dr. Alessandro Epasto**, staff research scientist at **Google**

**Privacy for graphs and graphs for privacy**  
*:measuring and mitigating privacy risk via graphs*

Graphs are a fundamental data structure in machine learning applications lying at the core of countless industrial applications. While traditional graph algorithms have not considered the privacy of the users providing the data, recently private graph analysis has received significant attention. In this talk, Dr. Epasto will cover recent research in differentially private (DP) algorithms in graphs. DP is a strong notion of privacy guarantees promising plausible deniability for user data. he will first cover our work on clustering graph data, highlighting as well industrial applications of private clustering. For this part, he will focus on our recent work on edge-differentially private hierarchical clustering algorithms with provable approximation guarantees (ICML 2023).

Then, he will briefly present our work on measuring privacy risk in data release using graph-based attacks (SIGMOD'23). he will present a novel framework that allows us to formally and empirically bound the risk of the identity of a user being leaked from their data. As an application, he will cover how our framework models important industrial applications such as the Chrome's Topics API for interest-based advertising.



**Dr. Alessandro Epasto** is a staff research scientist at Google, New York working in the [Graph Mining team](#) part of the [Algorithms and Optimization](#) team led by [Vahab Mirrokni](#). Alessandro received a Ph.D. in computer science from Sapienza University of Rome, advised by Professor [Alessandro Panconesi](#). Before joining Google, Alessandro was a postdoc at Brown University advised by Professor [Eli Upfal](#). His research interests include algorithmic problems in machine learning and data mining, in particular in the areas of privacy, clustering, and large scale graph analysis.