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Synthesizing Relational Data with Differential Privacy

Wednesday, April 13, 2022
4:00pm Pacific time

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Abstract

Providing access to sensitive data while preserving privacy is an important problem in the era of big data. A canonical solution to this problem is to replace the sensitive data with synthetic data that follow a similar distribution but do not reveal private information. In this talk, I will introduce our research efforts towards synthesizing relational data under differential privacy, which is a rigorous privacy framework that has gained mainstream adoption in both academia and industry. In particular, I will first present a method for synthesizing a single relational table, and then describe a more advanced technique for tackling the case of multiple tables with foreign key constraints. I will conclude the talk with directions for future work.

Biography

Xiaokui Xiao is an associate professor at the School of Computing, National University of Singapore. His research focuses on data management, especially on data privacy and algorithms for large data. He received the best research paper award in VLDB 2021, and is a distinguished member of ACM. He obtained a PhD in Computer Science from the Chinese University of Hong Kong in 2008.