Sharing Information with Differential Privacy: A Database Perspective (VLDB 2024 Keynote)

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ABSTRACT

In the digital age, the widespread collection and analysis of data pose significant privacy challenges. Differential privacy (DP) has emerged as a leading framework for ensuring that information release does not compromise individual privacy. In this talk, we will delve into the theoretical and practical aspects of achieving DP from a database perspective. We will start by examining database reconstruction attacks and their implications. We will then explore the design of DP query processing techniques, as well as the generation of synthetic databases under DP. Finally, we will discuss future directions for research in DP data management.

SPEAKER BIOGRAPHY

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Xiaokui Xiao is a professor at the School of Computing, National University of Singapore. His research focuses on data management and analytics, especially on data privacy and algorithms for large data. He is a co-recipient of the VLDB 2021 Best Research Paper Award, the 2022 ACM SIGMOD Research Highlight Award, and the 2024 ACM SIGMOD Test-of-Time Award. He is an IEEE fellow, an ACM distinguished member, and a trustee of the VLDB Endowment.