Computer Science
Seminar

Cloud-Assisted Distributed Private Data Sharing

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Abstract: Data privacy is an important issue to address when multiple data owners are required to integrate and share sensitive information for data analysis. We study the privacy threats caused by distributed data sharing and present the first cloud-based data sharing framework to integrate horizontally partitioned data from multiple data owners. The cloud performs the anonymization in a top-down fashion. It proceeds from the most generalized values of attributes (serve as the root of the tree) and specializes them (i.e., generate less generalized values as siblings of the parent node) in every iteration. A candidate value is selected for specialization in each iteration based on its score. The score of each candidate is calculated securely using multiple cryptographic protocols to ensure security. Finally, the cloud adds noise to the integrated data and releases them in a differentially private manner.

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