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Secure and efficient outsourcing differential privacy data release scheme in Cyber-physical system

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Abstract

A cyber-physical system is a mechanism controlled or monitored by computer-based algorithms, tightly integrated with the internet and its users. Cyber-physical systems such as smart grid, autonomous automobile systems, medical monitoring, process control systems, robotics systems, and automatic pilot avionics will use physical sensors to produce and collect data. Most of the data contains personal information, which is so called privacy, should be carefully protected. How to protect privacy is now a hot-topic not only in academia but also in industry. Differential privacy has been accepted as the privacy concept due to its concise definition and its simple implementation. However, the interactive model can not achieve differential privacy without data provider's timely answers, which means data provider should always be attachable. It is unrealistic to keep data provider online due to the risk of data provider be broken will grow rapidly as time goes by. With today's differential privacy technology, a non-interactive model remains

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