

Name: Adarsh Mathad Vijayakumar
CWID: A20424847
Email: avijayakumar@hawk.iit.edu

CSP554 – Research Paper Proposal

Privacy Protection in Big Data Environment: A Technological Perspective and Review

Due to the fast growth of emerging information technologies such as Internet of Things (IoT), cloud computing, Internet services, and social networking an increasing interest in big data security and privacy is aroused. The increasing amount of big data also increases the chance of breaching the privacy of individuals. An entire lifetime of big data can be broadly classified into three phases: big data generation; processing and analytics; storage and management. Since big data require high computational power and large storage, distributed systems are used. As multiple parties are involved in these systems, the risk of privacy violation is increased. The five salient features of big data: volume, variety, velocity, value, and veracity bring great challenges on protecting big data security and privacy during its whole lifetime. Big data normally contains valuable or sensitive information about user behaviors, preferences, interests, mobility, and so on. User privacy is easily leaked if the data cannot be protected well during its lifetime. Therefore, if we want to enjoy the convenience and benefits from big data, guarantee of its security and privacy becomes an essential task.

This paper focuses on privacy and security concerns in big data. The goal of this paper is to provide a comprehensive overview of the privacy preservation mechanisms in big data and present the challenges for existing mechanisms. In particular, this paper illustrates the infrastructure of big data and the state-of-the-art privacy-preserving mechanisms in each stage of the big data life cycle (data generation, data storage, and data processing). This paper will present an overview of the Privacy preserving methods for the big data.

References:

1. https://www.researchgate.net/publication/301716085_Protection_of_Big_Data_Privacy
2. <https://journalofbigdata.springeropen.com/articles/10.1186/s40537-016-0059-y>
3. <https://pdfs.semanticscholar.org/6f31/8a5d53e919574960eb6e84030c37f18ee2d1.pdf>