

# SECURITY REQUIREMENTS ENGINEERING FOR BIG DATA

A Dissertation submitted in partial fulfilment of the requirement for the award  
of degree of

**Master of Technology**  
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# ABSTRACT

The area of Security Requirements Engineering is becoming one of the most widely researched areas in Software Engineering having captured the interest of Software Engineering community for its profound importance in the development of robust and secure software. However, the maturity of Security Requirements Engineering as applied to Big Data is still in its infancy stage as shown by scarcity of related material in literature. Big data refers to the recent growth in data generated by technologies such as social networks at a very high rate with qualities of high volume, high velocity and variety. Big Data has brought many security concerns in as far as protecting data managed in these highly distributed environments is concerned. These emerging technologies have not only made data management more flexible but have also increased the attack surface by introducing many vulnerabilities making data very much at risk from various threats. Recent study has shown that the design of the Big Data stores was meant to improve scalability, performance and flexibility while security was given least priority. Hence, it is imperative to ensure that Security Requirements Engineering for Big Data environments is given a profound consideration so as to protect sensitive information stored there in.

In this thesis we propose a framework for Security Requirements Engineering for Big Data. We elicit the security requirements from vulnerabilities inherent in the Big Data stores based on generic operations (Create, Read, Update, and Delete) performed on the database. If the database is secure then fewer resources will be invested in securing the application making application development more cost effective.

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# CERTIFICATE



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This is to certify that dissertation entitled “*Security Requirements Engineering for Big Data*” has been completed by **PRUDENCE KADEBU** (Roll Number: **2K12/SWE/25**) for partial fulfilment of the requirements for the award of **Master of Technology** degree in **Software Engineering**. This work is carried out by her under my supervision and has not been submitted earlier for the award of any other degree or diploma in any university to the best of my knowledge.

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