A

Major Project Report

On

CRYPTCLOUD+: SECURE AND EXPRESSIVE DATA ACCESS CONTROL FOR CLOUD STORAGE

Submitted to

Jawaharlal Nehru Technological University, Hyderabad

in partial fulfillment of the requirement for the award of Degree of

Bachelor of Technology

in

Computer Science & Engineering

by

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2022-2023

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CERTIFICATE

This is to certify that the Major-Project entitled **"CRYPTCLOUD+: SECURE AND EXPRESSIVE DATA ACCESS CONTROL FOR CLOUD STORAGE"** is submitted by **YADA.SRIVALLI (196Y1A05B7)** , **PASUNURI.ESTHERA (206Y5A0508)**, **SANA (196Y1A0590)** and **UGGE.PALLAVI (196Y1A05A6)** in the partial fulfillment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering during academic year 2022-23.

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ABSTRACT

Secure cloud storage, which is an emerging cloud service, is designed to protect the confidentiality of outsourced data but also to provide flexible data access for cloud users whose data is out of physical control. Ciphertext-Policy Attribute-Based Encryption (CP-ABE) is regarded as one of the most promising techniques that may be leveraged to secure the guarantee of the service. However, the use of CP-ABE may yield an inevitable security breach which is known as the misuse of access credential (i.e. decryption rights), due to the intrinsic "all-or-nothing" decryption feature of CP-ABE. In this project, we investigate the two main cases of access credential misuse: one is on the semi-trusted authority side, and the other is on the side of cloud user. To mitigate the misuse, we propose the first accountable authority and revocable CP-ABE based cloud storage system with white-box traceability and auditing, referred to as CryptCloud+. We also prove the security of our system and present the experimental results to demonstrate the utility of our system.

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