

A
Major Project Report
on
**SESPHR: A METHODOLOGY FOR SECURE
SHARING OF PERSONAL HEALTH RECORDS IN
CLOUD**

Submitted to
Jawaharlal Nehru Technological University, Hyderabad
in partial fulfillment of the requirements for the award of Degree of
Bachelor of Technology

in
Computer Science & Engineering
by

BHUPATHI BHAVANA
BODIGE TEJASRI
HAFSA KAINATH
KALIMI NIHARIKA

(196Y1A0508)
(196Y1A0513)
(196Y1A0545)
(196Y1A0549)

Under the guidance
of
Mr. M. RANJITH KUMAR
Asst. Professor



Department of Computer Science & Engineering
SUMATHI REDDY INSTITUTE OF TECHNOLOGY for WOMEN

(Approved by AICTE, New Delhi; Affiliated to JNTU, Hyderabad)

Ananthasagar(Vill), Hasanparthy(M), Warangal – 506 371(T.S.), Website : www.sritw.org

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Rajan

PRINCIPAL

Sumathi Reddy Institute of Technology for Women
Ananthasagar (V), Hasanparthy (M)
WARANGAL - 506 371 (T.S.)



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



CERTIFICATE

This is to certify that the project entitled "SESPHR : A METHODOLOGY FOR SECURE SHARING OF PERSONAL HEALTH RECORDS IN CLOUD" is submitted by *B.Bhavana (196Y1A0508)*, *B.Tejasri (196Y1A0513)*, *Hafsa Kainath (196Y1A0545)* and *K.Niharika (196Y1A0549)* 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.

Mr. M.RANJITH KUMAR
Project Guide

Dr. E.SUDARSHAN
Head of the Department


External Examiner
PRINCIPAL

Sumathi Reddy Institute of Technology for Women
Ananthasagar (V), Hasa
WARANGAL - 506 371

ABSTRACT

The widespread acceptance of cloud based services in the healthcare sector has resulted in cost effective and convenient exchange of Personal Health Records (PHRs) among several participating entities of the e-Health systems. Nevertheless, storing the confidential health information to cloud servers is susceptible to revelation or theft and calls for the development of methodologies that ensure the privacy of the PHRs. Therefore, we propose a methodology called SeSPHR for secure sharing of the PHRs in the cloud. The SeSPHR scheme ensures patient-centric control on the PHRs and preserves the confidentiality of the PHRs. The patients store the encrypted PHRs on the un-trusted cloud servers and selectively grant access to different types of users on different portions of the PHRs. A semi-trusted proxy called Setup and Re-encryption Server (SRS) is introduced to set up the public/private key pairs and to produce the re-encryption keys. Moreover, the methodology is secure against insider threats and also enforces a forward and backward access control. Furthermore, we formally analyze and verify the working of SeSPHR methodology through the High Level Petri Nets (HLPN). Performance evaluation regarding time consumption indicates that the SeSPHR methodology has potential to be employed for securely sharing the PHRs in the cloud.



Rijan

Principal

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Ananthasagar (V), Hasanparthy (M)
WARANGAL - 506 371 (TS)