Ph.D. Research Proposal

(Area of the research proposal)

Scalable and Secure Sharing of Personal Health records in Cloud Computing Using Attribute Based Encryption

Name of the Candidate

Email Id;

Advisor:

Name of the University

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CHAPTER 1: INTRODUCTION

Personal health record is considered as one of the efficient patient centric model that enables the extent of the health information exchange. This information is concerned with high security and wide privacy as it contains personal health information of patients. Cloud providers play the role of third party as the information is often outsourced from the service providers. Moreover, it has enhances the chance of exposing the data to the unauthorised parties (Chen et al., 2012). Encryption process enables the patient to maintain the PHR confidentiality as it has been proven as a promising method to protect the data towards the third party. However, issues are associated with the private data exposure for the key management that maintain the flexible access and user revocation to consider the challenges of cryptographic data access control access.

In this research, the major aim associated with the development of a framework regarding the patient personal data that can ensure the access control of PHR data stored in the semi-trusted servers.

CHAPTER 2: STATE OF ART

This section associated with the existing research work of the other researchers that have highlighted the recent development of the research regarding the PHR services and the cloud service involvement.

1.1 Extent of PHR services

Personal health record is associated with the development of the model regarding the patient centric health information that create, manage and control the personal health data. Practice of outsourcing the data is essential for the health care centres as the maintenance of the medical record and data maintenance requires additional infrastructure (Alagöz et al., 2010).

1.2 Fine grained data access control with ABE

Application of the ABE as fine grained data is required to concentrate towards the development of the controlled manner of outsourcing the data. As found from the research work of Chase and Chow it has been found that the ABE are segmented in different sections that are governing towards the different attributes of the users (Li et al., 2010).

1.3 Revocable ABE

In case of ABE, a general problem is linked with the challenging problem of revoke the attributes efficiency. Traditionally, it is associated with the consideration fo the broadcast periodic update that unrevoked the users in frequent manner.

1.4 Existing Frameworks

As found from the existing model of the cloud based security maintenance the scalable PHR sharing outsourcing method which is associated with security model to define the problem and requirements development

CHAPTER 3: RESEARCH OBJECTIVE AND APPROACH

For the development of the fine grained data access control over the PHR the selection of attribute based encryption has been considered to encrypt PHR file data of the patient. In this research, major consideration has been provided over the secondary research to gain the proper knowledge over the existing framework suggested by other researchers (Wang et al., 2012). Major focus has been provided over the multiple data owner scenario and data outsourcing aspects to understand the multiple domain of PHR system. In addition, proper concern has been provided towards the revocation and access break situation in case of emergency.

CHAPTER 4: CURRENT WORK AND PRELIMINARY RESULTS

CHAPTER 5: WORK PLAN AND IMPLICATIONS

CHAPTER 6: CONCLUSION

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