

# Secure Fine-grained Encrypted Keyword Search for e-Healthcare Cloud

## ABSTRACT:

E-Healthcare systems are increasingly popular due to the introduction of wearable healthcare devices and sensors. Personal health records (PHRs) are collected by these devices and stored in a remote cloud. Due to privacy concern, these records should not be accessible by any unauthorized party, and the cloud providers should not be able to learn any information from the stored records. To address the above issues, one promising solution is to employ attribute based encryption (ABE) for fine-grained access control and searchable encryption for keyword search on encrypted data. However, most of existing ABE schemes leak the privacy of access policy which may also contain sensitive information. On the other hand, for users' devices with limited computing power and bandwidth, the mechanism should enable them to be able to search the PHRs efficiently. Unfortunately, most existing works on ABE do not support efficient keyword search on encrypted data. In this work, we propose an efficient hidden policy ABE scheme with keyword search. Our scheme enables efficient keyword search with constant computational overhead and constant storage overhead. Moreover, we enhance the recipient's privacy which hides the access policy. As of independent interest, we present a trapdoor malleability attack and demonstrate that some of previous schemes may suffer from such attack.

## **SYSTEM REQUIREMENTS:**

### **HARDWARE REQUIREMENTS:**

- System : Pentium i3 Processor.
- Hard Disk : 500 GB.
- Monitor : 15'' LED
- Input Devices : Keyboard, Mouse
- Ram : 4 GB

### **SOFTWARE REQUIREMENTS:**

- Operating system : Windows 10.
- Coding Language : Java
- Web Framework : Flask

### **REFERENCE:**

H. Wang, J. Ning, X. Huang, G. Wei, G. S. Poh and X. Liu, "Secure Fine-Grained Encrypted Keyword Search for E-Healthcare Cloud," in IEEE Transactions on Dependable and Secure Computing, vol. 18, no. 3, pp. 1307-1319, 1 May-June 2021, doi: 10.1109/TDSC.2019.2916569.