



Case Study



**PSMPAL: Patient Self-Controllable, Multi-Level Privacy-Preserving Cooperative Authentication and Load balancing in Distributed M-Healthcare Cloud Computing System**

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**ABSTRACT**

Distributed m-healthcare cloud computing system significantly facilitates

efficient patient treatment for medical consultation by sharing personal health information among healthcare providers. However, it brings about the challenge of keeping both the data secure and balancing load to improve the efficiency. Many existing access control and anonymous authentication schemes cannot be straightforwardly exploited. To solve the problem, in this paper, a novel authorized accessible privacy model (AAPM) is established with efficient Load balancing. Patients can authorize physicians by setting an access tree supporting flexible threshold predicates. Then, based on the technique of attribute-based designated verifier signature, a patient self-controllable multi-level privacy-preserving cooperative authentication scheme (PSMPA) adding Load balancing (PSMPAL) for increasing the efficiency in realizing three levels of security and privacy requirement in distributed m-healthcare cloud computing system is proposed.

**Keywords:** Authentication, access control, security and privacy, distributed cloud computing, m-healthcare system, Load balancing.

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