**Achieve Privacy-Preserving Priority Classiﬁcation on Patient Health Data in Remote eHealthcare System**

**Abstract:**

The wireless body area network (WBAN) has attracted considerable attention and becomes a promising approach to provide a 24-h on-the-go healthcare service for users. However, it still faces many challenges on the privacy of users' sensitive personal information and the confidentiality of healthcare center's disease models. For this reason, many privacy-preserving schemes have been proposed in recent years. However, the efficiency and accuracy of those privacy-preserving schemes become a big issue to be solved. In this paper, we propose an efficient and privacy-preserving priority classification scheme, named PPC, for classifying patients' encrypted data at the WBAN-gateway in a remote eHealthcare system. Specifically, to reduce the system latency, we design a non-interactive privacy-preserving priority classification algorithm, which allows the WBAN-gateway to conduct the privacy-preserving priority classification for the received users' medical packets by itself and to relay these packets according to their priorities (criticalities). A detailed security analysis shows that the PPC scheme can achieve the priority classification and packets relay without disclosing the privacy of the users' personal information and the confidentiality of the healthcare center's disease models. In addition, the extensive experiments with an android app and two java server programs demonstrate its efficiency in terms of computational costs and communication overheads

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Pentium Dual Core.
* Hard Disk : 120 GB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 1 GB

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows XP/UBUNTU.
* Implementation : NS2
* NS2 Version : 2.28
* Front End : OTCL (Object Oriented Tool Command  Language)
* Tool : Cygwin (To simulate in Windows OS)