**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 become a promising approach to provide a 24-hour on-the-go healthcare service for users. However, it still faces many challenges on privacy of users’ sensitive personal information, 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. Inthispaper,weproposeaneﬃcientandprivacy-preservingpriorityclassiﬁcationscheme,namedPPC,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 relay these packets according to their priorities (criticalities). Detailed securityanalysisshowsthatthePPCschemecanachievethepriorityclassiﬁcationandpacketsrelaywithout disclosing the privacy of the users’ personal information and 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)