**Securing Data in Internet of Things (IoT) Using Cryptography and Steganography Techniques**

**Abstract:**

Internet of Things (IoT) is a domain wherein which the transfer of data is taking place every single second. The security of these data is a challenging task; however, security challenges can be mitigated with cryptography and steganography techniques. These techniques are crucial when dealing with user authentication and data privacy. In the proposed work, the elliptic Galois cryptography protocol is introduced and discussed. In this protocol, a cryptography technique is used to encrypt conﬁdential data that came from different medical sources. Next, a Matrix XOR encoding steganography technique is used to embed the encrypted data into a low complexity image. The proposed work also uses an optimization algorithm called Adaptive Fireﬂy to optimize the selection of cover blocks within the image. Based on the results, various parameters are evaluated and compared with the existing techniques. Finally, the data that is hidden in the image is recovered and is then decrypted

**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)