EDITORIAL

This Issue brings together three papers that research data encryption and provide new solutions for data security. There has been a growing tendency to move towards cloud computing technology in an attempt to provide effective and fast information data processing services. However, with the increase in outsourcing of IT services to third-parties, confidential information is becoming more vulnerable to leaks. As users need to process data in the cloud, encryption schemes are of paramount importance.

The first paper, entitled "A Non-Algorithmic File-Type Independent Method for Hiding Persistent Data in Files", is by Maha F. Sabir, James H. Jones, and Hang Liu, from the USA. It proposes and tests a non-algorithmic and file-type independent approach for hiding persistent and stealthy data in files. Rather than use steganography and cryptography, a black box approach is employed to find candidate hiding locations, resulting in designing a methodology for identifying and testing conditions favorable for hiding benign and persistent data in arbitrary file types.

In the second paper, "Hive Stream Encryption (HSE): A New Stream Encryption Algorithm", the authors Mahmoud Barnawi, Saad Alajmi, and Bin Mai from the USA present a new encryption algorithm called Hive Stream Encryption (HSE), based on stream encryption techniques. This algorithm offers the strength and complexity to overcome the weaknesses and shortfall in current stream encryption methods. The research illustrates that HSE is effective and efficient for data encryption.

The third paper is entitled "Genetic Algorithm-based Key Generation for Fully Homomorphic Encryption", and is by Majedah Alkharji, Mayyada Al Hammoshi, Chunqiang Hu, and Hang Liu, also from the USA. It presents a method to use a Genetic Algorithm to generate keys for the fully homomorphic encryption scheme and its effectiveness is examined. The results showed that a GA-generated key provides more randomness than other conventional methods used to generate public and private keys.

The three papers discuss diverse solutions for improving the effectiveness and security of encryption, especially regarding data storage in the cloud, which all have notable implications for academics and practitioners alike.

I am sure that you will enjoy reading this Issue.

Gurpreet Dhillon, Editor-in-Chief