Guest Editorial Preface

Special Issue on Internet of Things, Next Generation Networks, Data Mining, and Cloud Computing 2017 (Part 1)

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The current era witness the enormous usage of automation and intelligent machines. The soft computing emerges with numerous modeling techniques. The problems are resolved using different machines learning, soft computing and Internet of things domains. In order to realizes the dream of IoT, smart cities and soft computing, across the globe lot of research works are going on and in parallel the industry are giving the products to materialize these goals. The main idea of this Special issue is to cover both the theory and applications issues from researcher, academicians, scientists and engineers covering a wide range of areas to present their latest research findings in Internet of Things, Smart cities, soft computation techniques and related areas to identify present problem's solution and future challenges in the combination of research areas.

There is a rich literature on the topic and numerous advancements have appeared in the past decade with the focus on improved security against various privacy attacks in the cloud computing environment. Demand of security assurance against emerging privacy attacks makes the task of maintaining output's utility to public become ever more challenging. At present, the underlying mobility of services remains limited: end-user services other than voice are hardly portable across networks. This functionality is central to exploiting thing-to-thing communications. In this respect, next-generation networks hope to offer mobility much more broadly. "Generalized mobility" is a term closely associated with NGN. It denotes the possibility of seamless and ubiquitous access to services, irrespective of location and the technology used.

NGN is a broad concept, and there are several definitions of NGN at this time. ITU formally defines NGN as a "packet-based network able to provide telecommunication services and make use of multiple broadband transport technologies in which service-related functions are independent from underlying transport-related technologies". In general, most analysts describe NGN as a multi-service network based on Internet Protocol (IP) technology. NGN will address both network and service elements, providing new opportunities for service providers, operators, content developers, manufacturers, and users. The use of data search capabilities and statistical algorithms to search existing databases for patterns and correlations between them that give new meaning to their data

content is data mining. Data Mining is recently a new trend used to identify large data sets due to complexity, cardinality, and continuality.

In this regards first paper talks about "Network Traffic Intrusion Detection System Using Fuzzy Logic and Neural Network." An anomaly-based intrusion detection system is developed to detect the intrusion in network traffic. Fuzzy Inference System is designed using the fuzzy rule approach to classify the test data as normal or attack and detect the level of sensitivity of intrusion between 0 to 1, where 0-0.5 represents Normal data and 0.51-1 represents Attack data. Similarly, Neural Network scheme is implemented where training and testing of datasets is performed for intrusion detection, where 0 represents Normal data and 1 represents Attack data. By analyzing the result, the neural system achieves 99.91% accuracy for the DoS and Probe type of attack compared to fuzzy system which achieves 90% accuracy. True Positive Rate should be as high as possible which is achieved in Neural Network Model - 99.98%. True Negative Rate should also be as high as possible as achieved in Neural Network Model – 99.73%.

The second paper is on "Organ-Based Medical Image Classification Using Support Vector Machine." The aim of this paper is to analyze the performance of different feature extraction techniques for medical image classification problem. Efforts are made to classify Brain MRI and Knee MRI medical images. Gray Level Co-occurrence Matrix (GLCM) based texture features, DWT and DCT transform features and Invariant Moments are used to classify the data. Experimental results shown that the proposed system produced better results however the training data is less than testing data.

The third paper talks about "Security and Verification of Server Data Using Frequent Itemset Mining in Ecommerce." Method implements a basic idea of completeness verification and authentication approach in which the client will uses a set of frequent item sets as the evidence, and checks whether the server has missed any frequent item set as evidence in its returned result. It will help client detect untrusted server and system will become much more efficiency by reducing time. In authentication process CaRP is both a captcha and a graphical password scheme. CaRP addresses a number of security problems altogether, such as online guessing attacks, relay attacks, and, if combined with dual-view technologies, shoulder-surfing attacks

The fourth paper talks about "Intelligent Wildlife Tracking Using Ubiquitous Technological Suite." This paper proposes an intelligent system to track location of an individual animal or animals in wildlife sanctuary. Existing systems makes use of various technologies such as RFID, GPS, GSM, etc. RFID based systems either lack in range if passive tags are used or lack in cost effectiveness if active tags are used. Similarly, GSM based system becomes costlier and requires constant network connectivity. Hence this paper proposes a Wi-Fi based tracking system. The mobile application accesses the location information from the database for particular animal and plots it onto the Map. This paper comprises of system architecture, proposed algorithm and mathematical model.

The fifth paper is on "Web-Proxy-Based Authentication and Authorization Mechanism Against Client-Based HTTP Attacks." There has been a huge development in how to read a data from sensor device such as infrared (IR) device, temperature device, etc. Sensor data collection has wide issues of information security. Information security is also the current topic of discussion due to its use in application in various fields. The technique of authenticate authenticates each user role dynamically using a signature based access control and verifies the identity of user together with the device. Access control mechanism not only prevents unauthorized access but also prevent misuse of data. Existing system generates shared key for each session but it generates huge overhead and not suitable for the real world applications so in proposed system we used public key cryptography to reduce the overhead.

As guest editors, we hope that spectrum of research works covered under this special issue will be of value for multitude of readers/researchers. We are also grateful to the authors for making

their valued research contributions to this issue and their patience during crucial revision stages. The technical standards and quality of published content is based on the strength and expertise of the reviewer board members who have been grossly involved in providing high quality reviews for the submitted papers. Our special thanks go to the Editor-in-Chief of the International Journal of Synthetic Emotions (IJSE), Dr. Nilanjan Dey for all his help, support, efficiency and competence rendered to this special issue.

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