

## Editorial Preface

# Special Issue on Internet of Things, Next Generation Networks, Data Mining, and Cloud Computing 2017 – Part II

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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 continuity.

In this regards first paper talks about iParking- An Intelligent Android-Cloud Based Smart Parking Reservation System Using Smart Phones Supportive to Smart City. The iParking system proposed in this paper allows drivers to find and reserve the vacant parking slots through their smartphones and additionally support the principles of "Smart City." The design and implementation of this proposed system called Reservation Based Smart Parking System (RSPS) is based on cloud computing and android application and finds availability of nearest parking slots. The objective is to reduce the time in finding the parking lots and avoid unnecessary traveling. The technology proposed in this paper is Infrared Sensors (IR Sensors) used for detecting the occupancy of parking slots. The iParking uses Radio Frequency Identification Devices (RFID) to identify and track a car. The methodology

proposed in this paper can easily be compared with existing parking system in terms of reducing the fuel consumption.

The second paper is on Parallel Outlier Detection for Streamed Data using Non-Parameterized approach. Outlier detection is used in various applications like detection of fraud, network analysis, monitoring traffic over networks, manufacturing and environmental softwares. The results regarding the abnormal behavior have to be done very quickly and in a limited time frame and on an infinite set of data streams coming over the networks. To address the problem of detecting outliers on a real-time basis is a challenging task and hence has to be monitored with the help of the processing power used to design the graphics of any processing unit. The algorithm used in this paper uses a kernel function to accomplish the task. It produces timely outcome on high speed multi-dimensional data. This method increases the speed of outlier detection by 20 times and the speed goes on increasing with the increase with the number of data attributes and input data rate.

The third Paper talks about Long-term and short-term traffic forecasting using Holt-Winters method: A Comparability approach with comparable data in multiple seasons. The need of faster life has caused the exponential growth in No. of vehicles on streets. The adverse effects include frequent traffic congestion, less time efficiency, unnecessary fuel consumption, pollution, accidents, etc. One of most important solution for resolving these problems is efficient transportation management system. The proposed forecasting model for short-term analysis will be having access to data as close as 30-minute difference from the time of prediction. Our proposed solution has integrated use of Holt-Winters (HW) method along with comparability schemes for seasonal approach.

The fourth Paper talk about Smart Refrigerator with Recipe Assistance. Internet of Things (IoT) will lead to a technological revolution that will change the way people live and interact with their surroundings. Intelligent appliances combined with multimedia capability have been emerging in everyone's life. The system will also help in checking the availability of ingredients based on the recipe user wishes to cook. The time required by an individual for manually checking the availability of ingredients in the refrigerator and then thinking about what to cook is greatly reduced using this system. Most of the information is automatically generated using RFID tags. Once the user logins into the application he/ she will be suggested the possible list of recipes based on the availability.

The fifth paper is on Framework for Threat Analysis And Attack Modelling Of Network Security Protocols. Hackers can enter into the system and can steal crucial or sensitive information about other authentic users and in case of banks leads to frauds. Security thus, becomes an important issue for all companies and banks. Intrusion detection systems help such companies by detecting in real time whether an intrusion is carried on or not. Here the authors are developing a signature based intrusion detection system which will scan incoming packets and send a warning message to system administrator. Also, the authors are implementing a framework and provide it to all the users so that developing intrusion detection based system similar to ours. The advantage of using framework is that it can be upgraded and re-defined whenever it is needed.

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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