Guest Editorial
Network Security and Data Mining

Globalization today pervades almost every facet of human life thanks to the emergence of new digital technologies in computing and communications. At the same time, informatics with its strong focus on providing fast and ready access for human, based on these developments in computing and communications plays more very crucial role in people's lives and permeates all it in all respects, from entertainment to healthcare and from databases to e-governance. Recently, communication systems have attracted much attention, fueled largely by growing interest in various intelligent systems. Designing high-performance, scalable, robust and secure systems presents an extraordinary challenge to the research community. This special issue aims to collect high-quality research articles with a solid background in both theoretical and practical aspects of Communication, Computing and Information Technology. The issue will carry revised and substantially extended versions of selected papers presented at the Second International Conference on Communication, Computing and Information Technology (ICCCMIT 2014; 12-13 December 2014, Chennai, India).

This special issue on Communication, Computing and Information Technology - I of the JOURNAL OF COMMUNICATIONS SOFTWARE AND SYSTEMS aims to report on the recent advancement and developments in various aspects of the Communication, Computing & Information Technology and so on. Eight papers were submitted and Six of them have been recommended for publication based on the standard reviewing process. Papers published in this special issue of JCOMSS cover most research topics previuosly reported.

In the work "Efficient Routing in Mobile Adhoc Networks Emphasizing Quality of Service by Trust & Energy based AODV" [1], the authors Sridhar S and Baskaran R present a trust and energy based AODV where nodes are selected for routing based on its trust and energy value. A threshold value is defined and nodes are preferred for routing only if its trust and energy levels are higher than threshold. The work is implemented and simulated on NS-2. The simulation results have shown improvement on QoS metrics when compared with traditional AODV and DSR.

In the work "Single Sign-on Mechanism for Secure Web Service Access through ISSO" [2], the authors Deeptha R and Rajeswari Mukesh designed more secured authentication mechanism that enables an authorized user with a single username/password to be authenticated by many service providers in a distributed network system. The existing SSO scheme has several security attchks of which the first attack permits a malicious service provider to successfully communicate with a legal user more than one time. Another attack is that a third party without any security credential may be able to access network services easily by impersonating some legal user or a fictional user. In this work, they proposed Improved Single sign-on (ISSO) scheme, which prevents Credential recovery attack, Impersonation attack and Data injection attack. Three banking web applications used SOAP based request and response mapping for efficient handling of communication protocols. The testing result stated that the ISSO scheme fights against the attacks that were present in Improved SSO scheme.

In the work "Reusable Multi-Stage Multi-Secret Sharing Schemes Based on CRT" [3], the authors Anjaneyulu Endurthi, Oinam Bidyapati Chanu, Appala Naidu Tentu and V. Ch. Venkaiah proposed three secret sharing schemes that use the Mignotte's sequence and two secret sharing schemes that use the Asmuth-Bloom sequence. All these five secret sharing schemes are based on Chinese Remainder Theorem (CRT). The first scheme that uses the Mignotte's sequence is a single secret scheme. It is extended to the multi-stage multi-secrets in the second scheme, which is later improved to result in a third scheme. The first scheme that uses the Asmuth-Bloom sequence is designed for the case of a single secret and the second one is an extension of the first scheme to the case of multi-secrets. A novel feature of schemes is that the shares of the participants are reusable, i.e, same shares can be used even with a new set of secrets. the dealer. Correctness of the proposed schemes is discussed and show that the proposed schemes are computationally secure.

In the work "Effectiveness of Support Vector Machines in Medical Data mining" [4], the authors Padmavathi J, Heena L and Sabika Fathima analyzes the effectiveness of SVM, the most popular classification techniques in classifying medical datasets. They analysed the performance of the Naïve Bayes classifier, RBF network and SVM Classifier. It is observed that SVM classifier produces better percentage of accuracy in classification. The work has been implemented in WEKA environment and obtained results show that SVM is the most robust and effective classifier for medical data sets.

In the work "Mining Software Repositories for Defect Categorization" [5], the authors Sakthi Kumaresh and Baskaran R attempted to categorize defects by proposing an algorithm called Software Defect CLustering (SDCL). It aims at mining the existing online bug repositories like eclipse, Bugzilla and JIRA for analyzing the defect description and its categorization. The proposed algorithm is designed by using

text clustering and works with three major modules to find out the class to which the defect should be assigned. The algorithm provides classification accuracy more than 80% in all of the three above mentioned repositories.

REFERENCES

[1] Sridhar S and Bhaskaran R. Efficient Routing in Mobile Adhoc Networks Emphasizing Quality of Service by Trust & Energy based AODV.

[2] Deeptha R and Rajeswari Mukesh. Single Sign-on Mechanism for Secure Web Service Access through ISSO.

[3] Anjaneyulu Endurthi, Oinam Bidyapati Chanu, Appala Naidu Tentu and V. Ch. Venkaiah. Reusable Multi-Stage Multi-Secret Sharing Schemes Based on CRT.

[4] Padmavathi J, Heena L and Sabika Fathima. Effectiveness of Support Vector Machines in Medical Data mining.

[5] Sakthi Kumaresh and Baskaran R. Mining Software Repositories for Defect Categorization.

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