

Editorial “Secure Multimedia Communication in Vehicular Adhoc Network”

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Multimedia Communication enhances the safety of passenger by providing visual picture of accidents and danger situations in Vehicular Adhoc Networks (VANETs). Security, High speed of vehicles, dynamic topology and low bandwidth etc. are main challenges for multimedia traffic in VANETs. Multimedia Communication in VANETs is prone to security attack due to lack of infrastructure, mobility and dynamic network topology as compare to any other network. Several Security attacks are possible on multimedia application, which includes Denial of Service, Masquerade, fake information, false position information and ID disclosure. Vehicular Multimedia Communication also has vulnerabilities which include Jamming, Forgery, Traffic Tampering, Impersonation, Privacy Violation and On-board Tampering etc.

We conducted this special issue on the topic of Secure Multimedia Communication in Vehicular Adhoc Network. The call for paper is distributed among a lot of research groups, at number of different portals, websites, forums, etc. We got a very good response and receive many high quality research articles from all around the world. The high quality of the articles puts all the reviewers in difficulty to decide what to accept and what to not accept. The review process was very tough and it was very difficult to select few articles among the received dozen of articles. We are very thankful to the reviewers and we appreciate their efforts that they put to make this issue successful.

First paper that is accepted in this issue is written by R. Arshad et al. and titled as “Elliptic curve cryptography based mutual authentication scheme for session initiation protocol”. In this article, they perform a cryptanalysis of Tsai’s scheme and consider the vulnerabilities like password guessing attack and stolen-verifier attack. Moreover, Tsai’s scheme does not

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facilitate known-key secrecy and perfect forward secrecy. So they propose novel and secure mutual authentication scheme based on elliptic curve discrete logarithm problem for SIP, which is immune to the presented attacks. The second accepted article is written by Gaurav Bhatnagar et al. and it is titled as “A new aspect in robust digital watermarking”. The authors presented an idea to scale up the size of host image equal to the size of watermark via over-sampling and then decompose it using stationary wavelet transform. Binary watermark is embedded in loss-less manner in order to enhance security and prevent ambiguity.

Aftab Ali et al. presented “A cluster-based key agreement scheme using keyed hashing for Body Area Networks” which is based on security framework using Keyed-Hashing Message Authentication Code (HMAC-MD5) to protect the personal information in a BAN. Hsin-Te Wu et al. written an article with title as “RSU-based message authentication for vehicular ad-hoc networks”. In this paper they proposed message authentication scheme that provide message authentication within intra and between inter roadside units ranges and hand-off between different roadside units. The proposed scheme also balances the overhead for computation and communication with security against attacks.

Debnath Bhattacharyya et al. in their article “Cell-graph coloring for cancerous tissue modeling and classification” focused on the performance analysis of cancer diagnosis process. Their work intends to automate the solution to the problem of identifying cancerous sample biopsies applying customized graph Coloring method solving by Genetic Algorithm on the cell graphs.

Po-Chyi Su et al. in “A practical design of high-volume steganography in digital video files” examine the volume of audio/video data streams in compressed video clips/files for effective steganography.

We would like to take this opportunity to thank the Editor-in-Chief of the Multimedia Tools and Application Journal, for his invaluable support and encouragements throughout the preparation of this special issue. We thank the staff at Springer for their kind help and to all the reviewers who played a major role in the success of this issue. Finally, we hope you will enjoy reading this selection of papers.



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