

# Multimedia Encryption, Transmission and Authentication

Edited by

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## Contents

	Page No.
<b>Part I- Multimedia Encryption and Transmission</b>	
Chapter 1    Image and Video Coding Techniques <i>Sinzobakwira Issa and Othman O. Khalifa</i>	2
Chapter 2    Video Coding: MPEG standards <i>Othman O. Khalifa, Sinzobakwira Issa and Muhammad Umar Siddiqi</i>	7
Chapter 3    H.264/Advance Video Coding Standard <i>Othman O. Khalifa, Sinzobakwira Issa and Aisha-Hassan Abdulla</i>	16
Chapter 4    Development of Scalable Video Compression algorithm <i>Othman O. Khalifa, Sinzobakwira Issa and Mohamed Abomhara</i>	22
Chapter 5    Video Encryption Using Computation between H.264/AVC and AES Encryption Algorithm <i>Mohamed Abomhara Omar Zakaria and Othman O. Khalifa</i>	29
Chapter 6    Selective Video Encryption Algorithm Based on H.264/AVC and AES <i>Mohamed Abomhara Omar Zakaria and Othman O. Khalifa</i>	39
Chapter 7    Scalable Video Coding: A Review <i>Haris Al Qodri Maarif, Teddy Surya Gunawan, Othman O. Khalifa</i>	56
Chapter 8    JSVM Reference Software <i>Haris Al Qodri Maarif, Teddy Surya Gunawan, Othman O. Khalifa</i>	71
Chapter 9    Fast Mode Decision Algorithm <i>Haris Al Qodri Maarif, Teddy Surya Gunawan, Othman O. Khalifa</i>	78
Chapter 10    An Overview of Scalable Video Streaming <i>Mohammed Abumuala, Othman Khalifa and Aisha-Hassan A. Hashim</i>	88
Chapter 11    A Survey on Video Segmentation for Real-Time Applications <i>Haris Al Qodri Maarif, Sara Bilal, Teddy Surya Gunawan, Othman O. Khalifa</i>	100
Chapter 12    H.264/AVC Video Coding Tools and Functions <i>Sinzobakwira Issa, Othman O. Khalifa and Aisha-Hassan Abdulla</i>	107
Chapter 13    Speech Coding Techniques and Algorithms <i>Liban A. Kassim, Othman O. Khalifa, Teddy S. Gunawan</i>	116
<b>Part II- Digital Watermarking</b>	
Chapter 14    Digital Watermarking: An Overview <i>Othman O. Khalifa and Yusnita binti Yusof</i>	135
Chapter 15    Digital Watermarking : Related work <i>Othman O. Khalifa and Yusnita binti Yusof</i>	143
Chapter 16    Digital Watermarking Techniques and Methodologies <i>Othman O. Khalifa and Yusnita binti Yusof</i>	150
Chapter 17    Wavelet Transform for Digital Images Watermarking <i>Othman O. Khalifa, Yusnita Yusof</i>	156
Chapter 18    Wavelet Digital Watermarking System Design and Performance Evaluation <i>Othman O. Khalifa and Yusnita binti Yusof</i>	166
Chapter 19    An Improved Wavelet Digital Watermarking Software Implementation <i>Othman O. Khalifa and Yusnita binti Yusof</i>	175

Chapter 20	Adaptive Digital Watermarking System for Authentication of Intellectual Properties <i>Rashidah F. Olanrewaju, Azizah Abd Manaf and Akram Zeki</i>	182
Chapter 21	An Evaluation of Transform Domain Watermarking and its application to Intellectual Properties of images <i>Rashidah F. Olanrewaju, Othman O Khalifa, Aisha Hassan Hashim, A.A. Aburas and Akram Zeki</i>	192
Chapter 22	Applications of Digital Watermarking: Current and Future Trends <i>Othman O. Khalifa and Yusnita binti Yusof</i>	198
Chapter 23	State-Of-The-Art Digital Watermarking Attacks <i>Othman O. Khalifa and Yusnita binti Yusof</i>	204
Chapter 24	Performance evaluations of Digital Watermarking System <i>Yusnita binti Yusof and Othman O. Khalifa</i>	215
<b>Part-III Multicast Transmission</b>		
Chapter 25	Classifications Of Multicast Routing In Mobile Ad Hoc Networks <i>Mohammad Qabajeh, Aisha-Hassan A. Hashim, Othman O. Khalifa and Liana Qabajeh</i>	221
Chapter 26	Qualitive study on Multicast Routing Protocols In Manets <i>Mohammad Qabajeh, Aisha-Hassan A. Hashim, Othman O. Khalifa and Liana Qabajeh</i>	228
Chapter 27	Issues In Location-Based Multicast Routing In Manets <i>Mohammad Qabajeh, Aisha-Hassan A. Hashim, Othman O. Khalifa and Liana Qabajeh</i>	235
Chapter 28	Multicasting Challenges In Wireless Mesh Networks <i>M. L. Sanni, A. A. Hashim, F. Anwar and J. I. Daoud</i>	241
Chapter 29	Mobility Management In Multicast Environment <i>M. L. Sanni, A. A. Hashim, A. W. Naji and G. S. M. Ahmed</i>	249
Chapter 30	<i>Multicast Security</i> : Issues and Solutions <i>Mohammad Qabajeh, Aisha-Hassan A. Hashim and Othman O. Khalifa</i>	257
Chapter 31	Real-time MPEG-4 transmission over Wireless LAN <i>Abdirisag Mohammed Jama and Othman O. Khalifa</i>	263

# Chapter 4

## DEVELOPMENT OF SCALABLE VIDEO COMPRESSION ALGORITHM

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### 4.1. INTRODUCTION

The technology based on scalable video coding appears as a new phenomenon. The use of internet needs a huge bandwidth and possesses extreme requirements in terms of jitter, latency and loss experiences by viewers. It is very crucial to have the idea of monochrome digital video data sequence which is a set of individual pictures called frames. This frame needs to be considered as a light intensity of two dimensions,  $x$  and  $y$ , where  $x$  and  $y$  denote spatial coordinates. It is proportional to the brightness of the frame or the gray level at the point for monochrome. The normal standard speed at which these frames are displayed is 30 frames per second. This representation is called canonical representative. However, canonical representation has negative impact because it needs very huge amounts of memory. Therefore, video needs to be compressed considerably for efficient storage and sharing over the web [1].

In fact, there are lots of redundancies within the video data that can be eliminated so that file size reduction or compression can be achieved. The development of image processing and applications has tremendously contributed to the field of video transmission over a heterogeneous media as well as iterative delivery platforms with dedicated content requirements. The conventional video coding systems encode video content with a given bitrates adapted to a specific function or application. As a result, conventional video coding does not meet the fundamental requirements of the state-of-art flexible digital media application [2].

In video streaming application, for instance broadcast channels over the air either cable or satellite, a compressed signal will take less bandwidth as compared to uncompressed signal. This means that with the help of compression in video stream, more channels can be obtained in less broadcast space. Another advantage of video compression for the web users is that