

Selected Readings in  
**COMPUTING AND  
TELECOMMUNICATIONS**

Editors  
Mira Kartiwi  
Teddy Surya Gunawan  
Aisha Hassan Abdalla Hashim



IIUM Press  
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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## TABLE OF CONTENT

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<b>PREFACE .....</b>	<b>X</b>
<b>1. MANUSCRIPT PROCESSES MONITORING SYSTEM FOR RESEARCH MANAGEMENT CENTER</b>	
Aznan Zuhid bin Saidin, Mira Kartiwi and Husam bin Latih @ Abdullatif ..	<b>1</b>
<b>2. IIUM STUDENTS FORUM SYSTEM</b>	
Mira Kartiwi and Waleed Mohamed Ibrahim .....	<b>9</b>
<b>3. SABA DECORATION FACTORY (SDF) SYSTEM</b>	
Mira Kartiwi and Abdulaziz Omar .....	<b>17</b>
<b>4. TAKAFUL AGENCY WEB PORTAL</b>	
Mira Kartiwi and Mohd. Hafiz Zairin bin Ayop .....	<b>27</b>
<b>5. HUMAN CAPITAL BUSINESS PARTNER INFORMATION TECHNOLOGY &amp; NETWORK TECHNOLOGY MAN POWER MODEL</b>	
Akram M. Z. Khedher and Siti Sarah binti Abdul Halim .....	<b>39</b>
<b>6. DEVELOPMENT OF ENERGY ASSESSMENT TOOLS FOR SINGLE PHASE APPLIANCES</b>	
Musse Mohamud Ahmed and Siti Nor Amiza bt Massere.....	<b>52</b>
<b>7. FINGERPRINT AUTHENTICATION SYSTEM USING MATLAB</b>	
Teddy Surya Gunawan and Mohd. Hanis bin Jenalis .....	<b>66</b>
<b>8. PERFORMANCE EVALUATION OF LOSSLESS SPEECH AND AUDIO COMPRESSION ALGORITHMS</b>	

<b>9. DESIGN AND IMPLEMENTATION OF VOICE SECURITY SYSTEM IN MATLAB AND JAVA</b>	
Teddy Surya Gunawan and Siti Ruqayah bt. Mohd Akahsah.....	<b>91</b>
<b>10. DESIGN AND DEVELOPMENT OF RFID SECURITY MODEL</b>	
Ahmed Wathik Naji and Fatema-Tuz-Zohra .....	<b>112</b>
<b>11. RADIO PROPAGATION MEASUREMENT AND CHANNEL MODELLING FOR WIRELESS BODY AREA NETWORK</b>	
Mimi Aminah bt. Wan Nordin and Norsyaidatul Fairuz bt. Fauziz .....	<b>125</b>
<b>12. FEATURE EXTRACTION FOR AUTOMATIC FETUS AGE ESTIMATION FOR ULTRASOUND IMAGES USING ELLIPSE MODEL</b>	
Teddy Surya Gunawan and Norakmal Abdullah .....	<b>143</b>
<b>13. NOISE REDUCTION USING KALMAN FILTER</b>	
Teddy Surya Gunawan and Ismail Haji Hassan Dualeh.....	<b>168</b>
<b>14. PARALLEL ALGORITHMS FOR EDGE DETECTION ON CLUSTER COMPUTER</b>	
Teddy Surya Gunawan and Elkabir Ansoya Bacar.....	<b>189</b>
<b>15. PREDICTION OF PROBABILITY OF BIT ERROR RATE IN DIGITAL COMMUNICATION SYSTEM</b>	
Saad Osman Bashir, Abdallah Mohammed Tawfeeq Zyoud and Besir Salah Eldin Mahmoud Sid Ahmed .....	<b>209</b>
<b>16. COMPARATIVE ANALYSIS OF LOW POWER VLSI CIRCUITS TECHNIQUES</b>	
Anis Nurashikin Nordin and Fatin Alea bt. Talib .....	<b>219</b>

<b>17. SPHERICAL POV LED DISPLAY USING PIC 16F628</b>	
Teddy Surya Gunawan and Muhammad bin Ahmad .....	<b>235</b>
<b>18. IMPLEMENTATION OF CAPACITANCE OF VOLTAGE CONVERTER FOR CAPACITIVE TRANSDUCERS</b>	
A.H.M. Zahirul Alam and Nur Fadhila bt. Che Halim .....	<b>255</b>
<b>19. PROTEIN CODING IDENTIFICATION OF HUMAN DNA SEQUENCE USING WAVELET</b>	
Teddy Surya Gunawan and Norashikin Abdul Wahab .....	<b>274</b>
<b>20. OPTIMIZATION OF ZAKAT MANAGEMENT SYSTEM IN INDONESIA USING GEOGRAPHIC INFORMATION SYSTEM (GIS)</b>	
Muharman Lubis .....	<b>292</b>
<b>21. IIUM CAR STICKER RECOGNITION USING PHASE BASED TEMPLATE MATCHING ALGORITHM</b>	
Teddy Surya Gunawan and Siti Aisyah bt. Mohamad .....	<b>308</b>

## **9. DESIGN AND IMPLEMENTATION OF VOICE SECURITY SYSTEM IN MATLAB AND JAVA**

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Teddy Surya Gunawan and Siti Ruqayah bt. Mohd Akahsah

### **ABSTRACT**

In this project, the issued discuss is about design and implementation of voice security system in MATLAB and JAVA. Voice security in this proposal will be focusing on two techniques, which are scrambling and encrypting. The ultimate purpose of this proposal is to differentiate which is the best technique can be used to ensure the confidentiality of the transmitted audio signal. Beside that, three algorithm will be discussed further which are consist of scrambler algorithm, naïve algorithm and selective bit encryption algorithm. The standard that will be used to simplify and accomplish the project is Advanced Encryption Standard. This project is tested by using MATLAB version 7.6, JavaTM2 SDK, Standard Edition, v1.4 and Window Sound Recorder.

### **9.1 INTRODUCTION**

The study of voice security is helping us to utilize all the technologies that we have especially in sharing information using voice medium. A voice security system is used in order to ensure end-to-end security for speech in real time communication systems such as GSM system, PGPfone, VoIP, telephone and radios. In this case, two functions will be defined thoroughly in this proposal afterward. The functions are scrambling and encrypting. Basically scrambling is related on the analog signal meanwhile encrypting is related to discrete signal. Through simulation from Matlab coding, it is the best method in understanding how the audio signal is being scrambled and