An Anthology of Applied Computer Technologies

Zulkefli Muhammed Yusof
M.M Hafizur Rahman

IIUM PRESS
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

AN ANTHOLOGY OF APPLIED COMPUTER TECHNOLOGIES

Editors

Zulkefli Muhammed Yusof

M.M. Hafizur Rahman

IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
©IIUM Press, IIUM

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without any prior written permission of the publisher.

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

Zulkefli Muhammed Yusof and M.M. Hafizur Rahman:
An Anthology of Applied Computer Technologies

ISBN: 978-967-418-106-2

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

CONTENTS

EDITORIAL NOTE
Zulkefli Bin Muhammed Yusof..... i

1. Web And Mobile Based Phrase Dictionary
Normaziah A. Aziz, Noranidah Binti Mohamad, Nur Afifah Binti Ahmad Murad 1

2. Computerized Observation Of Motion In Badminton Tracking System
Normaziah A. Aziz, M. Amar Odenan, Taufiq M. Khadafi 11

3. Analyzing Driving Behaviour Using Speech Recognition Through KDE And MLP
Abdul Wahab Bin Abdul Rahman, Norazilah Nuji, Khadijah Adibah Ahmad 21

4. Driver Identification and Driver's Emotion Verification Using KDE and MLP Neural Networks
Abdul Wahab Bin Abdul Rahman, Norzaliza Md Nor, Asma' Ismail 35

5. Emotion Speech Recognition Using KDE and MLP Neural Networks
Abdul Wahab Bin Abdul Rahman, Nor Fadilah Basiron, Nor Ashikin Ishak 55

6. Investigating Computer Forensic Tools And Their Searching Techniques
Normaziah A. Aziz, Aniyath Ali, Mahmoud Abdul Wahab 69

7. A Web-Based Approach for the KICT Evaluation System
Al-Sakib Khan Pathan, Nurul Nabilah Kamarudin, Hasfaizaidah Hassan, Nadilatul Eliana Ali 87

8. Brainwave Study On The Effect Of Music On Perception
Abdul Wahab Bin Abdul Rahman, Nur Izrin Roslan, Siti Norhaizum Mohd Hasnan 95

9. Brute Force Password Search Using Multithreading and Grid Computing
Al-Sakib Khan Pathan, Ahmad Nazmi Fadzal 113

10. A Study Using Driving Simulator To Understand Driver's Perception A Priori And Post Priori Of Accidents
Abdul Wahab Bin Abdul Rahman, Nor Akmal Harun, Norasyikin Lipoh 125

11. Secure Coding in Cross Site Scripting
Normaziah A. Aziz, Milly Hafizah Mohd Kanafia, Salmiah Haseng 143

12. Pronouncing Dictionary for Minority Languages of Muslim Community
Normaziah A. Aziz, Ahmad Hasanul Ishraf Shuib, Mohd Fazlie Awalluddin 157

13. The Impact of Transmission Range over Node Density in Vehicular Ad Hoc Network (VANET) with Obstruction of Road Infrastructure
Zulkefli Bin Muhammed Yusof, Nur Nazmah Mat Zin 167

14. Mobile Data Services in Java 2 Platform Micro Edition (J2ME): MobileOrder
Zulkefli Bin Muhammed Yusof, Mohd Asyraf 177

15. Content Management System Minisite
Zulkefli Bin Muhammed Yusof, Ammar Bin Mat Rawi *189*

16. Classification Based On Basic Emotion
Abdul Wahab Abdul Rahman, Husna Mohd Salih, Nurulhidayah Abd. Latif *199*

17. Basic Emotions Verification and Identification using Gaussian Mixture Model (GMM) Features Extraction
Abdul Wahab Abdul Rahman, Siti Norhidayah Saad, Syuwaida N. Zahari *211*

18. SQL Injection Penetration Testing Tutorial
Al-Sakib Khan Pathan, Diallo Abdoulaye Kindy *225*

19. A Survey of Photonic Switching Network
Al-Sakib Khan Pathan, M. M. Hafizur Rahman *235*

20. An Evaluation of Photonic Switching Network
Al-Sakib Khan Pathan, M. M. Hafizur Rahman *255*

4. DRIVER IDENTIFICATION AND EMOTION VERIFICATION USING KDE AND MLP NEURAL NETWORKS

Abdul Wahab Bin Abdul Rahman, Norzaliza Md Nor, Asma' Ismail
Department of Computer Science, Faculty of Information and Communication Technology, International Islamic University Malaysia, Malaysia

ABSTRACT

Driver behaviour is a major factor that contributes to the high accidents rates. However, if we are able to identify their behaviour, it may be possible for us to detect driving idiosyncrasies that may prevent accidents. Therefore, this work presents simple and effective methods for an in-car data acquisition in collecting real time driving data. The data has been classified into three emotions for each driver which are happy expression, talking on the phone and normal driving. These data will be used to investigate the effectiveness of driver behaviour focusing on the driver's response towards the brake and gas pedal as well as its rate of change. From these data we will demonstrate simple yet effective technique in driver identification and driver verification. We use the Kernel Density Estimation (KDE) as a tool to extract features. Then, we use these features to recognize the emotion of the driver by using multi layer perceptron (MLP) as classifiers. The enhancement of driver's security, safety and comfort driving can be derived trough the performances of the driver's emotion verification which contribute to the development in the area of intelligent vehicle driver verification system.