

Dr. Chia Wai Chong

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Education:

PhD in Electrical and Electronics Engineering, The University of Nottingham

MSc in Electrical and Electronics Engineering, The University of Nottingham

BEng (Hons) in Electrical & Electronics Engineering, Nottingham Trent University

Teaching:

Operating System Fundamentals

Concurrent Programming

Digital Image Processing

Community Service

DIT Project

Implementation Project

Brief Employment History:

Sunway University: Lecturer

ENC Sdn. Bhd: Trainee

Honours and Awards:

Scholarship for PhD in Electrical & Electronics Engineering

KBU International College Merit Scholarship Year 2003 – 2006

KBU International College Book Price Award Year 2002/03, 2003/04

Session Chair for IMECS

Reviewer for Visual Information Processing in Wireless Sensor Networks

Reviewer for IET Wireless Sensor Systems (WSS)

Malaysia Technology Expo (MTE) 2014 – Bronze Medal

International Invention, Innovation & Technology Expo (ITEX) 2014 - Gold & Silver Medals

Research Interests:

Visual Processing

Embedded System

Wireless Sensor Network

Publications:

(A) Book/Edited Book:

- [1] Li-Minn Ang, Kah Phooi Seng, Li Wern Chew, Lee Seng Yeong, **Wai Chong Chia**, “Wireless Multimedia Sensor Networks on Reconfigurable Hardware: Information Reduction Techniques”, Springer, 2013.

(B) Journal /Book Chapters:

- [2] Mansoor Ebrahim, **Wai Chong Chia**, “A Comprehensive Review of Distributed Coding Algorithms for Visual Sensor Network (VSN)”, accepted by the International Journal of Communication Networks and Information Security (IJCNIS).
- [3] Nyugen Ho Minh Quang, **Wai Chong Chia**, Kah Phooi Seng, Li-Minn Ang, “Strip-based Multi-view Image Compression for Visual Sensor Networks”, Journal of Multimedia Processing and Technologies, vol. 3, no. 3, September 2012.
- [4] Adamu Murtala Zungeru, Kah Phooi Seng, Li-Minn Ang, **Wai Chong Chia**, “Energy Efficiency Performance Improvement for Ant-Based Routing Algorithm in Wireless Sensor Networks”, EURASIP Journal of Sensors, vol. 2013, article ID 759654, 17 pages, 2013.
- [5] Hao Wei Lee, Kah Phooi Seng, **Wai Chong Chia**, Li-Minn Ang, “Adaptive Circular Enclosure Color Distribution Geometrical Model Utilizing Point In-Polygon for Segregation between Lips and Skin Pixels”, International Journal of Future Computer and Communication, pp.242-245, 2012.
- [6] **Wai Chong Chia**, Li Wern Chew, Li-Minn Ang, Kah Phooi Seng, "Low Memory Image Stitching and Compression for WMSN using Strip-Based Processing", International Journal of Sensor Networks (IJSNet) Special Issue on "Multimedia Data Applications in Wireless Sensor Networks", vol. 11, no. 1, pp. 22-32, 2012.
- [7] Li Wern Chew, **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, "Low Memory Video Compression Architecture using Strip-Based Processing for Implementation in Wireless Sensor Networks", International Journal of Sensor Networks (IJSNet) Special Issue on "Multimedia Data Applications in Wireless Sensor Networks", vol. 11, no. 1, pp.33-47, 2012.
- [8] **Wai Chong Chia**, Wing Hong Ngau, Li Wern Chew, Lee Seng Yeong, Li-Minn Ang, Kah Phooi Seng, "FPGA Technology for Implementation in Vision Sensor Networks", *Chapter 14 of the edited book “Visual Information Processing in Wireless Sensor Networks”*, IGI Global, pp. 293-324, 2011.

- [9] **Wai Chong Chia**, Li Wern Chew, Li-Minn Ang, Kah Phooi Seng, “Binary-Uncoded Image and Video Compression using SPIHT-ZTR”, *International Journal of Image and Graphics (IJIG)*, vol. 11, no. 3, 2011.
- [10] **Wai Chong Chia**, Lee Seng Yeong, Wing Hong Ngau, Li Wern Chew, Li-Minn Ang, Kah Phooi Seng, “Human Face Detection and Tracking in a Wireless Visual Sensor Network Environment”, *Journal of Software Engineering*, vol. 3, no. 4, issue April-June, pp. 7-14, 2009.
- [11] Li Wern Chew, **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “High Performance Low-Complexity Line-Based Motion Estimation Algorithm with Smoothing and Preprocessing”, *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 23, no. 1, pp. 101-114, 2009.
- [12] Li Wern Chew, **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Very Low Memory Wavelet Compression Architecture using Strip-Based Processing for Implementation in Wireless Sensor Networks”, *EURASIP Journal on Embedded Systems*, vol. 2009, article ID 479281, 16 pages, 2009.
- [13] **Wai Chong Chia**, Li Wern Chew, Li-Minn Ang, Kah Phooi Seng, “Motion Estimation Algorithm using One-Bit-Transform with Smoothing and Preprocessing Technique”, *Chapter 13 of the edited book “Intelligent Automation and Computer Engineering”*, Springer, October 2009.
- [14] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Configuration of Adaptive Models in Arithmetic Coding for Video Compression with 3D SPIHT”, *Chapter 14 of the edited book “Intelligent Automation and Computer Engineering”*, Springer, October 2009.
- [15] Wei Jen Chew, Kah Phooi Seng, **Wai Chong Chia**, Li-Minn Ang, Li Wern Chew, “3D Face Recognition and Compression”, *Chapter 9 of the edited book “Intelligent Automation and Computer Engineering”*, Springer, October 2009.
- [16] Nandha Kumar and **Wai Chong Chia**, “An Automated Approach for locating multiple faulty LUTs in an FPGA”, *Microelectronics Reliability*, pp. 1900-1906, 2008.

(C) Conference Papers:

- [17] Fadil Mohamudally, Lee Seng Yeong, Sue Inn Ch’ng, **Wai Chong Chia**, “A Hybrid Object and Pixel-based Human Obstacle Detection and Depth Prediction”, accepted by the 18th IEEE International Symposium on Consumer Electronics (ISCE), 2014.
- [18] Chee Keong Alfred Lim, **Wai Chong Chia**, Siew Wen Chin, “A Mobile Driver Safety System: Analysis of Single-Channel EEG on Drowsiness Detection”, accepted by the *International Conference on Computational Science and Technology (ICCST)*, 2014.
- [19] Chee Keong Alfred Lim, **Wai Chong Chia**, “Analysis of Single-Electrode EEG Rhythms using MATLAB to Elicit Correlation with Cognitive Stress”, accepted by the *3rd International Conference on Computer Technology and Science (ICCTS)* 2014.
- [20] Mansoor Ebrahim, **Wai Chong Chia**, “Multi-view Image Compression for Visual Sensor Network based on Block-based Compressive Sensing and Multi-stage Joint Decoding”, accepted by *International Conference on Computational Science & Technoogy*, 2014.
- [21] **Wai Chong Chia**, Lee Seng Yeong, Sue Inn Ch’ng, Kah Phooi Seng, Li-Minn Ang, “The Effect of Rainfall on Feature Points Extraction and Image Stitching”, in *Proceedings of the International Conference on Information Science, Electronics and Electrical Engineering (ISEEE)*, 2014.
- [22] Mansoor Ebrahim, **Wai Chong Chia**, “Secure-Force: A Low-Complexity Cryptographic Algorithm for Wireless Sensor Network”, in *Proceedings of the International Conference on Control System, Computing and Engineering*, pp. 557-562, December , 2013.
- [23] **Wai Chong Chia**, Nami Salimi, “A Smart Parking and Reservation System for QR-Code-Based Car Park”, submitted to *International Conference on E-business Technology and Strategy*, 2013.
- [24] Nyugen Ho Minh Quang, **Wai Chong Chia**, Kah Phooi Seng, Lee Seng Yeong, “Multi-view Image Compression for Visual Sensor Networks (VSNs)”, in *Proceedings of the World Congress on Computer and Information Technology (WCCIT)*, pp.1-6, June , 2013.

- [25] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Performance Evaluation of Feature Detection in using Subsampled Images for Image Stitching”, in *Proceedings of the International Conference on Computer Science and Information Technology (ICCSIT)*, vol. 9, pp. 60-64, July, 2010.
- [26] Wei Jen Chew, Kah Phooi Seng, **Wai Chong Chia**, Li-Minn Ang, “Effects of using Minimal Transform Coefficients on 3D Face Recognition Rates”, in *Proceedings of the International Conference on Embedded Systems and Intelligent Technology (ICESIT2010)*, CD-ROM: Paper 86; ISBN 978-974-672-477-4, 2010.
- [27] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Multiview Image Compression using Stitching with Harris Corner Detector and Coset Coding”, in *Proceedings of the International Conference on Embedded Systems and Intelligent Technology (ICESIT2010)*, CD-ROM: Paper 12; ISBN 978-974-672-477-4, 2010.
- [28] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Image Compression using Stitching with Harris Corner Detector and SPIHT Coding”, in *Proceedings of the Visual Informatics: Bridging Research and Practice, Lecture Notes in Computer Science (LNCS 5857)*, pp. 653-663, Springer, 2009.
- [29] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Three-Dimensional Binary-Uncoded Video Compression using 3DSPIHT-ZTR”, in *Proceedings of the International Conference on Intelligent Human-Machine Systems and Cybernetics (IHMSC 2009)*, vol. I, pp. 371-374, 2009.
- [30] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Multiview Image Compression for Wireless Multimedia Sensor Network using Image Stitching and SPIHT Coding with EZW Tree Structure”, in *Proceedings of the International Conference on Intelligent Human-Machine Systems and Cybernetics (IHMSC 2009)*, vol. II, pp. 298-301, 2009.
- [31] **Wai Chong Chia**, Li-Minn Ang, and Kah Phooi Seng, “A New Configuration of Adaptive Arithmetic Model for Video Coding with 3D SPIHT”, in *Proceedings of the International MultiConference of Engineers and Computer Scientists (IMECS 2009)*, vol. I, pp. 783-788, 2009.
- [32] **Wai Chong Chia**, Li-Minn Ang, and Kah Phooi Seng, “2D One-Bit-Transform Motion Estimation Algorithm with Smoothing and Preprocessing”, in *Proceedings of the International MultiConference of Engineers and Computer Scientists (IMECS 2009)*, vol. I, pp. 829-834, 2009.
- [33] **Wai Chong Chia**, Li-Minn Ang, and Kah Phooi Seng, “Embedded Descendent-Only Zerotree Wavelet Coding for Image Compression”, in *Proceedings of the International MultiConference of Engineers and Computer Scientists (IMECS 2009)*, vol. I, pp. 922-926, 2009.
- [34] Wei Jen Chew, Kah Phooi Seng, **Wai Chong Chia**, Li-Minn Ang, Li Wern Chew, “3D Face Recognition System with Compression”, in *Proceedings of the International MultiConference of Engineers and Computer Scientists (IMECS 2009)*, vol. I, pp. 892-896, 2009.
- [35] Li Wern Chew, **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Tuned-Degree-K Zerotree Wavelet Coding with Virtual Nodes”, in *Proceedings of the International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS2008)*, pp. 45-48, December, 2008.
- [36] **Wai Chong Chia**, Li-Minn Ang, Kah Phooi Seng, “Slepian-Wolf SPIHT Video Coding Scheme without Feedback”, in *Proceedings of the International Symposium on Information Technology (ITSIM2008)*, vol. 4, pp. 2332-2335, 2008.