

CURRICULUM VITAE

Wen CHEN

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EDUCATION

Jan., 2007 – Oct., 2010 Ph.D., National University of Singapore, Singapore
Sep., 2003 – Jun., 2006 M. Eng., ChongQing University, China
Sep., 1999 – Jun., 2003 B. Eng., ChongQing University, China

RESEARCH INTERESTS

Experimental Optics: Digital holography; Optical microscopy; Optical metrology; Imaging in biology; Microoptics and microfluidics; Diffraction microscopy; Photonics technology.

Computational Optics: Digital signal processing; Optical image processing; Fringe pattern analysis; Quantitative phase retrieval; Inverse problem; Numerical reconstruction; Optical encoding.

WORK EXPERIENCE

May, 2010–Dec., 2010 Research Associate, Department of Electrical and Computer Engineering, National University of Singapore, Singapore
Advisor: Prof. Xudong Chen

Mar., 2013–Jun., 2013 Visiting Scholar, Rowland Institute at Harvard, Harvard University, U.S.A.
Host/Advisor: Dr. Ethan Schonbrun

Jan., 2011–Present Research Fellow, Department of Electrical and Computer Engineering, National University of Singapore, Singapore
Advisor: Prof. Xudong Chen

AWARDS AND HONORS

President's Graduate Fellowship, National University of Singapore, Jan. 2009 – May, 2010.
Research Scholarship, National University of Singapore, Jan. 2007 – Dec. 2008.

Outstanding Graduate Student Award, ChongQing University, China, 2006.
Exceptional Student Award, ChongQing University, China, 2000 – 2003.
Excellent Academic Scholarship (Highest Level), ChongQing University, China, 2000 – 2003.
One of Top Ten Pioneers in Science and Technology, College of Mechanical Engineering, ChongQing University, 2002.
Third Prize Award in 1st Competition of Innovative Designs of Creative Electrical-Machinery Models, ChongQing University, 2002.
Scholarship from China State Construction Corporation, ChongQing University, 1999 – 2000.

LIST OF PUBLICATIONS

REFEREED JOURNAL PAPERS

(From 2008, "*" Corresponding author)

- [1] **Wen Chen**, Xudong Chen, Adrian Stern, and Bahram Javidi*, "Phase-modulated optical system with sparse representation for information encoding and authentication," Submitted to IEEE Photonics Journal, 2013.
- [2] **Wen Chen**, Xudong Chen, Arun Anand, and Bahram Javidi*, "Optical encryption using multiple intensity samplings in the axial domain," Journal of the Optical Society of America A, Accepted and In Press, 2013.
- [3] **Wen Chen*** and Xudong Chen, "Object authentication in computational ghost imaging with the realizations less than 5% of Nyquist limit," Optics Letters, 38, 546 – 548, 2013.
- [4] **Wen Chen*** and Xudong Chen, "Optical image encryption based on multiple-region plaintext and phase retrieval in three-dimensional space," Optics and Lasers in Engineering, 51, 128 – 133, 2013.
- [5] **Wen Chen*** and Xudong Chen, "Security-enhanced interference-based optical image encryption," Optics Communications, 286, 123 – 129, 2013.
- [6] **Wen Chen*** and Xudong Chen, "Optical cryptography network topology based on 2D-to-3D conversion and phase-mask extraction," Optics and Lasers in Engineering, 51, 410 – 416, 2013.
- [7] **Wen Chen*** and Xudong Chen, "Interference-based optical image encryption using three-dimensional phase retrieval," Applied Optics, 51, 6076 – 6083, 2012.
- [8] **Wen Chen***, Xudong Chen, and Colin J. R. Sheppard, "Optical image encryption based on phase retrieval combined with three-dimensional particle-like distribution," Journal of Optics (IOP Publishing), 14, 075402 (9pp), 2012.
- [9] **Wen Chen*** and Xudong Chen, "Focal-plane detection and object reconstruction in the noninterferometric phase imaging," Journal of the Optical Society of America A, 29, 585 – 592, 2012.
- [10] **Wen Chen***, Xudong Chen, and Colin J. R. Sheppard, "Optical color-image encryption and synthesis using coherent diffractive imaging in the Fresnel domain," Optics Express, 20, 3853 – 3865, 2012.
- [11] **Wen Chen*** and Xudong Chen, "Structured-illumination-based lensless diffractive imaging and its application to optical image encryption," Optics Communications, 285, 2044 – 2047, 2012.

- [12] **Wen Chen***, Xudong Chen, and Colin J. R. Sheppard, “Optical image encryption based on coherent diffractive imaging using multiple wavelengths,” *Optics Communications*, 285, 225 – 228, 2012.
- [13] **Wen Chen*** and Xudong Chen, “Optical multiple-image encryption based on multiplane phase retrieval and interference,” *Journal of Optics (IOP Publishing)*, 13, 115401 (8pp), 2011.
- [14] **Wen Chen*** and Xudong Chen, “Optical image encryption using multilevel Arnold transform and noninterferometric imaging,” *Optical Engineering*, 50(11), 117001 (5pp), 2011.
- [15] **Wen Chen***, Xudong Chen, and Colin J. R. Sheppard, “Optical double-image cryptography based on diffractive imaging with a laterally-translated phase grating,” *Applied Optics*, 50, 5750 – 5757, 2011.
- [16] **Wen Chen*** and Xudong Chen, “Optical asymmetric cryptography using a three-dimensional space-based model,” *Journal of Optics (IOP Publishing)*, 13, 075404 (7pp), 2011.
- [17] **Wen Chen*** and Xudong Chen, “Optical cryptography topology based on a three-dimensional particle-like distribution and diffractive imaging,” *Optics Express*, 19, 9008 – 9019, 2011.
- [18] **Wen Chen*** and Xudong Chen, “Optical color image encryption based on an asymmetric cryptosystem in the Fresnel domain,” *Optics Communications*, 284, 3913 – 3917, 2011.
- [19] **Wen Chen*** and Xudong Chen, “Quantitative phase retrieval of complex-valued specimens based on noninterferometric imaging,” *Applied Optics*, 50, 2008 – 2015, 2011.
- [20] **Wen Chen**, Chenggen Quan*, and Cho Jui Tay, “Retrieval of complex object fields in coherent diffractive imaging using position shift of a phase mask,” *Optical Engineering*, 50(8), 080502 (3pp), 2011.
- [21] Chenggen Quan*, **Wen Chen**, and Cho Jui Tay, “Numerical reconstruction in in-line digital holography by translation of CCD position and gradient operator method,” *Optics Communications*, 284, 2767 – 2770, 2011.
- [22] **Wen Chen*** and Xudong Chen, “Space-based optical image encryption,” *Optics Express*, 18, 27095 – 27104, 2010.
- [23] **Wen Chen***, Xudong Chen, and Colin J. R. Sheppard, “Optical image encryption based on diffractive imaging,” *Optics Letters*, 35, 3817 – 3819, 2010.
- [24] **Wen Chen*** and Xudong Chen, “Quantitative phase retrieval of a complex-valued object using variable function orders in the fractional Fourier domain,” *Optics Express*, 18, 13536 – 13541, 2010.
- [25] Cho Jui Tay, Chenggen Quan*, **Wen Chen** and Yu Fu, “Color image encryption based on interference and virtual optics,” *Optics & Laser Technology*, 42, 409 – 415, 2010.
- [26] Chenggen Quan*, **Wen Chen**, and Cho Jui Tay, “Phase-retrieval techniques in fringe-projection profilometry,” *Optics and Lasers in Engineering*, 48, 235 – 243, 2010.
- [27] Cho Jui Tay, Chenggen Quan*, and **Wen Chen**, “Dynamic measurement by digital holographic interferometry based on complex phasor method,” *Optics & Laser Technology*, 41, 172 – 180, 2009.
- [28] Chenggen Quan*, Cho Jui Tay, and **Wen Chen**, “Determination of displacement derivative in digital holographic interferometry,” *Optics Communications*, 282, 809 – 815, 2009.

- [29] **Wen Chen**, Chenggen Quan*, and Cho Jui Tay, “Optical color image encryption based on Arnold transform and interference method,” *Optics Communications*, 282, 3680 – 3685, 2009.
- [30] **Wen Chen**, Chenggen Quan*, Cho Jui Tay, and Yu Fu, “Quantitative detection and compensation of phase-shifting error in two-step phase-shifting digital holography,” *Optics Communications*, 282, 2800 – 2805, 2009.
- [31] **Wen Chen**, Chenggen Quan*, and Cho Jui Tay, “Extended depth of focus in a particle field measurement using a single-shot digital hologram,” *Applied Physics Letters*, 95, 201103 (2009).
- [32] Chenggen Quan*, **Wen Chen**, and Cho Jui Tay, “Shape measurement by multi-illumination method in digital holographic interferometry,” *Optics Communications*, 281, 3957 – 3964, 2008.
- [33] **Wen Chen**, Chenggen Quan*, and Cho Jui Tay, “Retrieval of instantaneous frequency from digital holograms based on adaptive windows,” *Optical Engineering*, 47, 065801 (6pp), 2008.
- [34] **Wen Chen**, Chenggen Quan*, and Cho Jui Tay, “Measurement of curvature and twist of a deformed object using digital holography,” *Applied Optics*, 47, 2874 – 2881, 2008.

CONFERENCE PAPERS

- [35] **Wen Chen*** and Xudong Chen, “Noninterferometric phase imaging based on multiple-exposure recordings,” International Conference “Focus on Microscopy”, 1 April 2012 – 4 April 2012, Singapore.
- [36] **Wen Chen*** and Xudong Chen, “Optical cryptography using a three-dimensional space-based strategy and phase-shifting digital holography,” International Conference on Advanced Technology in Experimental Mechanics’11 (ATEM’11), **Invited Speaker (Wen Chen)**, 19 September, 2011 – 21 September, 2011, Kobe, Japan.
- [37] Chenggen Quan*, **Wen Chen**, and Cho Jui Tay, “Spatial and temporal phase retrieval techniques in digital holography,” International Conference on Experimental Mechanics 2010 (ICEM 2010), 29 November, 2010 – 1 December, 2010, Kuala Lumpur, Malaysia.
- [38] **Wen Chen***, Chenggen Quan, and Cho Jui Tay, “Optical image encryption with a bit-plane separation method in phase-shifting digital holography,” *Proceedings of SPIE 7522*, 752222 (2009).
- [39] **Wen Chen***, Chenggen Quan, and Cho Jui Tay, “Phase retrieval in digital holographic interferometry based on complex phasor and short time Fourier transform,” *Proceedings of SPIE 7155*, 71551I (2008). (**Awarded One of Best Student Presentations**).
- [40] **Wen Chen***, Chenggen Quan, and Cho Jui Tay, “Profiling of an object using a time-frequency analysis method in digital holographic interferometry,” *Proceedings of SPIE 7375*, 73754S (2008).
- [41] Chenggen Quan*, **Wen Chen**, and Cho Jui Tay, “Determination of curvature and twist of deformed object by digital holographic interferometry,” *Proceedings of SPIE 7375*, 73753H (2008).

PH.D. DISSERTATION

Wen CHEN, “Development of spatial and temporal phase evaluation techniques in digital holography,” **Ph.D. Dissertation**, National University of Singapore, 2010. **Ph.D. Thesis, Main Advisor**: Prof. Chenggen Quan.

PROFESSIONAL SERVICES

I am the Reviewer for Following International Journals:

Optics Letters (OSA)

Applied Optics (OSA)

Optics Express (OSA)

Biomedical Optics Express (OSA)

Journal of the Optical Society of America A (OSA)

Journal of the Optical Society of America B (OSA)

Optical Engineering (SPIE)

Journal of Biomedical Optics (SPIE)

Optics and Lasers in Engineering (Elsevier)

Optics & Laser Technology (Elsevier)

Journal of Optics (IOP Publishing)

Optics Communications (Elsevier)

Journal of Electronic Imaging (SPIE)

Journal of Computers

Progress In Electromagnetics Research C

Signal Processing (Elsevier)

IEEE Transactions on Information Forensics & Security

I am certified as one of the most active reviewers for OSA in 2012