

YUFENG ZHENG

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A. EDUCATION

2001-2005	Post-doctoral Research Associate, Computer Science, University of Louisville (Louisville, KY, USA)
1994-1997	Ph.D., Image Processing, Tianjin University (Tianjin, China)
1991-1994	M.S., Image Processing, Tianjin University (Tianjin, China)
1985-1989	B.S., Optical Instruments, Tianjin University (Tianjin, China)

B. POSITIONS AND HONORS

Positions

2006-	Assistant Professor (Tenure-track), Alcorn State University, Alcorn State, MS, USA
2001-2005	Post-doctoral Research Associate, University of Louisville, Louisville, KY, USA
1999-2001	CT Imaging Algorithm Senior Engineer, GE Hangwei Medical Systems Co. Ltd., Beijing, China
1997-1999	Sr. Software Engineer, Huawei Tech. Co., Beijing, China

Honors

2010	Provisional Patent in Thermal Face Recognition (P.I., Alcorn State University)
2009	Certificate of the Highest Funded Grants (awarded by the Department of Advanced Technologies)
2006-	Member of SPIE
2003	Patent in Glaucoma Classification (P.I., Docket# 1160.032PRV, University of Louisville)
2000-2001	Two "Night on Downtown Awards" by GE Medical Systems (Milwaukee, WI, USA)
1999	Certificated Senior Engineer in Computer Software Development by Beijing Government, China
1996	Outstanding Student Award for Excellence in Research and Publication (at Tianjin University)

Experience

2008	Invited Speaker of 7 th Annual Image Fusion Conference (Alexandria, VA) by IDGA.
2007-	Program Director of Computer Networking & Information Technology, Alcorn State University, MS.
2002-	A peer-reviewer of prestigious journals of SPIE, IEEE & Elsevier.
2000	Six-Sigma Green Belt certified by GE Medical Systems at Beijing, China

C. RESEARCH GRANTS

- USING ADVANCED IMAGE FUSION AND ADAPTIVE IMAGE COLORIZATION TO ENHANCE MULTISENSORY INPUT
DOD ARO (\$671K) Yufeng Zheng (PI) 9/15/2008-9/14/2011
To enhance computer vision and human vision by multispectral image fusion and night vision colorization.
- A THERMAL FACE RECOGNITION SYSTEM FOR SECURITY APPLICATIONS - A NOVEL APPROACH BY FACE PATTERN WORDS
DHS (\$338K) Yufeng Zheng (PI) 1/1/2010-12/31/2012
To develop a reliable thermal face recognition system for national security applications such as prevention against terrorism, especially at nighttime.
- DEVELOPMENT OF A KNOWLEDGE BASE TO SUPPORT DETECTION AND DIAGNOSIS AND RESEARCH IN MAMMOGRAPHY
DOD TATRC (\$2.4M) Yufeng Zheng (Co-PI) 9/15/2006-9/14/2010
To detect breast cancers using digitized mammograms at their early stages.
- VERSATILE AUTONOMOUS ELECTRIC PLATFORM FOR SPECIALIZED APPLICATIONS
SBA (\$570K) Yufeng Zheng (Co-PI) 9/1/2009-8/31/2010
To develop semi-autonomous vehicle technologies in support of a wide range of applications requiring data acquisition and real time relay back of information to a command and control center.

D. RESEARCH INTERESTS

- Image analysis
- Pattern recognition
- Visual process modeling
- Biometrics
- Computer-aided diagnosis

E. TEACHING EXPERIENCE

- Computer Graphics
- Digital Image Processing
- Data Structures and Algorithms
- Networking and Telecommunication
- Physics for Medical Imaging
- Networking Fundamentals
- Switching and Routing Basics
- WAN Technologies
- Biomedical Computing
- Network Programming with C#
- C# Programming Fundamentals

F. SELECTED PEER-REVIEWED PUBLICATIONS

Book Chapters

1. Yufeng Zheng, "Iterative Multiscale Fusion and Night Vision Colorization of Multispectral Images", Sensor Fusion and its Applications, ISBN 978-953-7619-X-X, 2010.
2. EA Essock, P Gunvant and Yufeng Zheng, "Nerve Fiber Analyzer GDx Progression", Optic Nerve Head and Retinal Nerve Fiber Analysis, Edited by Lester M, Garway-Heath D, Lemij H; Savona, Dogma. ISBN 88-87434-30-1, pp.111-113, 2005.

Journal Papers

1. Yufeng Zheng, "Breast Cancer Detection with Gabor Features from Digital Mammograms", Algorithms 2010, Vol. 3, pp.44-62, 2010.
2. Fengmei Zou, Yufeng Zheng, Zhengdong Zhou, and Kwabena Agyepong, "Gradient Vector Flow Fields and Spiculated Mass Detection in Digital Mammography Images", Digital Mammography, Lecture Notes in Computer Science, pp.299-306, Springer Berlin / Heidelberg, Volume 5116 (2008).
3. Yufeng Zheng and Edward A. Essock, "A local-coloring method for night-vision colorization utilizing image segmentation, segment recognition, histogram matching and image fusion", Information Fusion, Vol. 9, No. 2, pp.186-199 (2008).
4. Gunvant, Pinakin; Zheng, Yufeng; Toth, MArta; Hollo, GAbor, Atypical Retardation Pattern: Can Performance of Classification be Improved?, Optometry & Vision Science. 85(6):E482-E488, June 2008.
5. Pinakin Gunvant, Yufeng Zheng, Edward A. Essock, et. al., "Application of Shape-based Analysis Methods to OCT Retinal Nerve Fiber Layer Data in Glaucoma", Journal of Glaucoma, 16(6):543-548 (2007).
6. Edward A. Essock, Pinakin Gunvant, Yufeng Zheng, "Predicting Visual Field Loss In Ocular Hypertensive Patients Using Wavelet-Fourier Analysis Of GDx Scanning Laser Polarimetry", Optometry and Vision Science, VOL. 84, NO. 5, PP. E380-E386 (2007).
7. Yufeng Zheng, Edward A. Essock, Bruce C. Hansen and Andrew M. Haun, "A new metric based on extended spatial frequency and its application to DWT based fusion algorithms", Information Fusion, Vol. 8, No. 2, April 2007.
8. Edward A. Essock, Yufeng Zheng, Pinakin Gunvant, "Analysis of GDx-VCC Polarimetry Data by Wavelet-Fourier Analysis (WFA) Across Glaucoma Stage", IOVS, Vol. 46, No. 8, pp.2838-2847, August 2005.
9. Yufeng Zheng, Edward A. Essock and Bruce C. Hansen, "An advanced DWT fusion algorithm and its optimization by using the metric of image quality index", Optical Engineering, Vol.44, No.3, Mar 2005.

10. Pinakin Guntant, Yufeng Zheng, Edward A. Essock, et. al., "Predicting Subsequent Visual Field Loss in Subjects with Disc Hemorrhage using RNFL Polarimetry", *Journal of Glaucoma*, Vol.14, No.1, Jan 2005.
11. Yufeng Zheng, Mark P. Wachowiak, and Adel S. Elmaghraby, "Resolution improvement and detail enhancement for CT scout images", *Journal of Electronic Imaging*, Vol.14, No.1, Jan 2005.
12. Mark P. Wachowiak, Renata Smolíková, Yufeng Zheng, Jacek M. Zurada, and Adel S. Elmaghraby, "An Approach to Multimodal Biomedical Image Registration Utilizing Particle Swarm Optimization", *IEEE Transactions on Evolutionary Computation*, Vol. 8, No. 3, pp.289-301, June 2004.
13. Bruce C. Hansen, Edward A. Essock, Yufeng Zheng and J. Kevin DeFord, "Perceptual Anisotropies in Visual Processing and Their Relation to Natural Image Statistics", *Network: Computation in Neural Systems*, 14 (2003) 501-526, June 2003.
14. Daoyin Yu, Yufeng Zheng, Wei Yu, and Qingguo Geng, "Study on Echocardiographic Quantitative Analysis", *Chinese Journal of Biomedical Engineering*, Vol. 18 No. 3, September 1999.
15. Daoyin Yu, Qunfeng Zou, Wei Yu and Yufeng Zheng, "Image Connection and Its Application to Medical Ultrasonic Image", *Chinese Journal of Biomedical Engineering*, Vol. 17 No. 3, September 1998.
16. Daoyin Yu and Yufeng Zheng, "Precise Boundary Extraction of Echocardiographic Left-Ventricle Images", *Chinese Journal of Biomedical Engineering*, Vol. 15 No. 4, December 1996.
17. Yufeng Zheng, "Displaying a True Color Bitmap Image on a TVGA Card", *Application of the Computer Systems*, December 1996.
18. Yufeng Zheng and Daoyin Yu, "The Visual Design of Image Processing in DOS Environment", *Microcomputer & Its Applications*, September 1996.
19. Wenyao Liu and Yufeng Zheng, "The Light Scattering Analysis System on Line", *Chinese Journal of Scientific Instrument*, Vol. 17 No. 1, Jan. 1996.
20. Yufeng Zheng, "Implementing Full-screen Animation on a TVGA Card", *PC World China*, September 1995.

Conference Papers

1. Yufeng Zheng, "A Novel Thermal Face Recognition Approach Using Face Pattern Words", *Proc. SPIE*, Vol. 7667, "Biometric Technology for Human Identification VII" conference, SPIE Defense, Security, and Sensing, 5-9 April 2010, Orlando, United States.
2. Yufeng Zheng, "An orientation-based fusion algorithm for multisensor image fusion", *Proc. SPIE*, Vol. 7710, "Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2010" conference, SPIE Defense, Security, and Sensing, 5-9 April 2010, Orlando, United States.
3. Yufeng Zheng, "Multi-scale Fusion Algorithm Comparisons: Pyramid, DWT and Iterative DWT", 12th International Conference on Information Fusion, pp. 1060-1067, Seattle, WA, USA, July 6-9, 2009.
4. Yufeng Zheng and Kwabena Agyepong, "Component-based target recognition inspired by human vision", *Proc. SPIE*, Vol. 7335, 73350V (2009).
5. Yufeng Zheng, "Bio-inspired color image enhancement model", *Proc. SPIE*, Vol. 7341, 73410D (2009).
6. Fengmei Zou, Yufeng Zheng, Zhengdong Zhou, and Kwabena Agyepong, "Gradient Vector Flow Field and Mass Region Extraction in Digital Mammograms", 2008 21st IEEE International Symposium on Computer-Based Medical Systems, pp. 41-43 (CBMS 2008).
7. Yufeng Zheng, "Gaussian model-based statistical matching for image enhancement and segmentation," *Visual Information Processing XVII. Proceedings of the SPIE*, Vol. 6978, pp. 697802-1-697802-11 (2008).
8. Yufeng Zheng, Kwabena Agyepong, and Ognjen Kuljaca, "Multisensory data exploitation using advanced image fusion and adaptive colorization", *Signal Processing, Sensor Fusion, and Target Recognition XVII. Proceedings of the SPIE*, Vol. 6968, pp. 69681U-69681U-12 (2008).
9. Yufeng Zheng and Kwabena Agyepong, "Mass Detection with Digitized Screening Mammograms by Using Gabor Features", *Proceedings of the SPIE*, Vol. 6514, pp.651402-1-12 (2007).
10. Yufeng Zheng, Adel Elmaghraby and Hichem Frigui, "Three-band MRI image fusion utilizing the wavelet-based method optimized with two quantitative fusion metrics", *Proceedings of the SPIE*, Vol. 6144, pp. 61440R-1-61440R-12 (2006).
11. Yufeng Zheng, Bruce C. Hansen, Andrew M. Haun and Edward A. Essock, "Coloring Night-vision Imagery with Statistical Properties of Natural Colors by Using Image Segmentation and Histogram Matching", *Proceedings of the SPIE*, Vol. 5667, pp. 107-117 (2005).
12. Yufeng Zheng, Edward A. Essock and Bruce C. Hansen, "An Advanced Image Fusion Algorithm Based on Wavelet Transform – Incorporation with PCA and Morphological Processing", *Proceedings of the SPIE*, Volume 5298, pp. 177-187 (2004).

13. Yufeng Zheng and Edward A. Essock, "A Novel Feature Extraction Method – Wavelet-Fourier Analysis and Its Application to Glaucoma Classification", Proceedings of 7th Joint Conference on Information Sciences, pp. 672-675, Cary, North Carolina, September, 2003.
14. Yufeng Zheng, Xiaohui Cui, Mark P. Wachowiak, and Adel S. Elmaghraby, "CT Scout Z-resolution Improvement with Image Restoration Methods", Proc. SPIE Int. Soc. Opt. Eng. 5032, 1851 (2003), (SPIE Medical Imaging Conference,) San Diego, California, February, 2003.
15. Yufeng Zheng, Ji Du, Long Qi and Daoyin Yu, "Echocardiographic Visual Processing and Quantitative Analysis", PP.46-49, SPIE Proceedings Vol. 2866, International Conference on Holography and Optical Information, Nanjing, China, August 1996.

G. PROFESSIONAL SERVICE AND DEVELOPMENT

Professional Service

- Jan 2008 Technical Program Committee for ISCC'08 (13th IEEE Symposium on Computers and Communications)
- 2007- Program Director of Computer Networking & Information Technology, Department of Advanced Technologies, Alcorn State University, MS.
- 2007- Director of Pattern Recognition and Imaging Analysis Lab, System Research Institute, Alcorn State University, MS.
- 2006- Adjunct Faculty, Department of Computer Science, Alcorn State University, MS.
- 2002- Reviewer of journals of SPIE, IEEE, ACM, and Elsevier.

Invited Presentations

- 6/19/2010 "Breast Cancer Detection with Gabor Features", presented to the College Graduate Seminar, Tianjin University, Tianjin, China.
- 5/11/2010 "Multisensory Data Exploitation Using Advanced Image Fusion and Adaptive Colorization", presented to the DoD Program Mini-Workshop, University of Texas-Pan American, Edinburg, TX.
- 4/30/2010 "A Novel Thermal Face Recognition Approach", presented to the Graduate Seminar, The University of Southern Mississippi, Hattiesburg, MS.
- 11/21/2008 "Multisensory Image Fusion and Night Vision Colorization", presented to the 7th Annual Image Fusion Conference, Alexandria, VA.
- 10/21/2005 "Night-vision Colorization Utilizing Image Segmentation, Classification and Histogram Matching", presented to the Graduate Seminar, University of Louisville, Louisville, KY
- 3/14/2004 "A Wavelet-Fourier Analysis Method for Glaucoma Detection using GDx-VCC Polarimetry Data", presented to the Graduate Seminar, University of Louisville, Louisville, KY
- 1/11/2002 "Image Restoration Application in CT Imaging – Scout z-Resolution Improvement and Off-Focal Radiation Correction", presented to the Graduate Seminar, University of Louisville, Louisville, KY

Professional Development

- 12/6/2010 (scheduled to attend) "Cisco CCNP Training", Bushkill, PA
- 11/16/2009 "The USDA-CSREES Grantsmanship Workshops", Arlington, VA.
- 2/9/2007 "The NSF Faculty Early Career (CAREER) Development Proposal Workshop", Las Vegas, NV
- 10/27/2006 "The NSF Major Research Instrumentation (MRI) Workshop", Baltimore, MD.