Curriculum Vitae

WANG Yu-Ping

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CONTACT INFORMATION

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RESEARCH INTERESTS

Computer vision and image analysis, medical imaging, bioinformatics and data mining, geometric modeling and computer visualization, multimedia signal processing, genomic signal processing, systems biology and the development of biomedical imaging instruments.

EDUCATION

Post-doctoral study in Medical Imaging, Washington University School of Medicine, St. Louis, 1999-2000.

Ph.D. in Communications and Electronic Systems, School of Electrical and Information Engineering, Xi'an Jiaotong University, P. R. China, 1996.

M.S. in Computational Mathematics, Faculty of Science, Xi'an Jiaotong University, Xi'an, P.R. China, 1993.

B.S. in Applied Mathematics, Tianjin University, Tianjin, P.R. China, July 1990.

WORKING EXPERIENCE

1. September, 2003- Present: Assistant Professor, Computer Science and Electrical Engineering, University of Missouri-Kansas City
Collaborating member of UMKC Center for Research on Interfacial Structure & Properties (UMKC-CRISP), School of Dentistry

Conduct research, service and teaching in the area of biomedical imaging, with a focus on imaging problems in genomics/genetics.

2. April, 2001-Auguest 2003: Senior Research Engineer, Advanced Digital Imaging Research, LLC, League City, TX.

Conducted cytogenetic imaging research and development work, supported by several NIH SBIR (Small Business Innovation Research) grants.

3. *March 2000-March 2001: Senior Research Engineer, Perceptive Scientific Instrument Inc; Research engineer, Electrical Engineering Department, Texas A&M University.*

Performed research and development work on chromosomal image analysis with florescence in situ hybridization (FISH) imaging.

4. *March 1999-March 2000: Research Associate, Cardio-Vascular Image Analysis Lab., Washington University Medical Center, St. Louis.*

Developed computational algorithms for tagged MRI image motion and strain analysis used for heart disease diagnosis at Washington University Medical Center, St. Louis.

5. *Oct. 1996 - Feb. 1999: Research Fellow, Wavelets Strategic Research Program, National University of Singapore, Singapore.*

Performed research on wavelets based image processing algorithms and applied them to fingerprint recognition and compression, and mammographic image enhancement.

HONORS and AWARDS:

1. Senior Membership, IEEE, since 2006
2. List in Marquis Who's Who in America, since 2006
3. Keynote speaker, Wavelet Conference XI, San Diego, July 2005.
4. University of Missouri-Kansas City Faculty Research Grant award, 2004
5. Awards for best university graduates of Shannxi Province, China, 1996.
This is the highest honor for university graduate students.
6. Excellent postgraduate awards at Xi'an Jiaotong University, 1995.
7. The 505 awards conferred by a famous enterprise in China, 1994.
8. Chen DaXie awards under the name of a famous Chinese scientist Chen DaXie at Xi'an Jiaotong University, 1992.
9. Third place in college mathematics contests among nearly twenty colleges in the city of Tianjin, 1990.
10. Excellent student awards in Tianjin University, 1989.

TECHNICAL SKILLS

Programming Skills:
C/C++, Fortran, Basic, Pascal, OpenGL, Matlab, HTML, (La)Tex, UNIX Scripts.
OS's and Platforms:
Unix/Linux, Macintosh, and MS-Windows.

TEACHING

Course taught at the UMKC

Fall 2003, ECE 590IP/ECE 486, Digital Image Processing, 3 credit hours
Winter 2004, ECE 590B, Introduction to Biomedical Imaging, 3 credit hours
Fall 2004, ECE 590IP/ECE 486, Digital Image Processing, 3 credit hours
Winter 2005, ECE 590B, Introduction to Biomedical Imaging, 3 credit hours
Fall 2005, ECE 590IP/ECE 486, Digital Image Processing, 3 credit hours
CS 352, Data Structure and Algorithms, 3 credit hours
Winter 2006, ECE 590B, Introduction to Biomedical Imaging, 3 credit hours
ECE 484/590PR, Pattern Recognition, 3 credit hours
Fall 2006, ECE 590IP/ECE 486, Digital Image Processing, 3 credit hours
Winter 2007, ECE 590B, Introduction to Biomedical Imaging, 3 credit hours
Fall 2007, ECE 590IP/ECE 486, Digital Image Processing, 3 credit hours
ECE 590CI, Foundations of Computational Intelligence, 3 credit hours
Winter 2008, ECE 590B, Introduction to Biomedical Imaging, 3 credit hours
ECE 484/590PR, Pattern Recognition, 3 credit hours

Note: ECE590B and ECE590CI are new courses.

Research Supervision

Note: Three master students have graduated; each has a journal publication including IEEE Transaction.

Post-Doctoral Research Associates
1. Sheng Jianhua, 2009-present
2. Cao Hongbao, 2009-present.

Doctoral Dissertations
1. David Dai, in progress.
2. Stuerke Cecil, in progress.
3. Yang Michael Song, 2007
4. Ahmed Aadil Shaikh, 2005-2006,
5. Temrangsitornrat, Mongkol, 2005
6. Doynov, Plamen Gueorguiev, 2005

Masters Theses Supervised

1. Ragib Husain, Thesis title: *Wavelet based peak detection with application to biomedical imaging.* Graduated in 2004; now return to India.
2. Ashok Dandpat, Thesis title: *Classification of multiplex fluorescence in situ hybridization images using wavelets and fuzzy clustering.* Graduated in the fall of 2005; now work at Black and Veatch in Kansas City.
3. Gunampally, Maheswar Reddy. Thesis on *microarray image segmentation and quantization.* Graduated in the fall of 2006 and now works at Los Angles.

4. Komatreddy, Lakshmi, Thesis on *hyperspectral imaging data classification,* 2005.
95. Nakkerthi, Sunil, *Clustering for M-FISH image segmentation, 2004*.
6. Bolaram, Shashikar, *Spectroscopic imaging processing using ICA*, (terminated).
7. El-Ghussein, Fadi Mohammed, *Fiber tracking from neuron images*, (in progress).
8. Vattikuti, Leelavenkatakrishna, Fusion of genetic data using ICA, (in progress).

Master/PhD Committee Memberships

1. Lu Tingfei, Thesis title: *The development of an automatic metaphase finding system for human chromosome study*, Jan, 26, 2004.
2. Pavan Kumar Reddy Yanala, Thesis title: *Automated Detection of Metaphase Chromosomes for Fluorescence In Situ Hybridization and Routine Cytogenetics*., Oct, 8, 2004
3. Sachin Mathur, *Biological significance of clustering of microarray data*, 2004.
4. Swetha Thummala, *Reducing effects of false alarms using responses*, Oct. 2005.
5. Jubin Sanghvi, *IFREE - An Indexed Forest of Representer Expression Extractor for position frequency matrices to rapidly detect novel motifs*, Feb., 2006.
6. Balaji Jayaraman, *Hierarchical representation of protein folding patterns based on contact map distances*, May 1, 2006.
7. Li Zhichuan, *Modeling organization structures in UML*, March 21, 2007.
8. Megha Andra, *Structure property function software for complementary analysis of multimodal dental imaging/spectral data*, April 27, 2007.
9.Ranganathan Parthasarathy, *Biomaterial characterization using indigenously developed software SPF*, July 26, 2007.
10. Yao Hongzhi, Dept. of Physics, Chair: Wai-Yim Ching

Required Graduate Projects (Direct Reading)

1. Bysani Balavenkatak.
2. Mohan, Anand, Microarray spot segmentation.
3. Vaddiparthi Vaddiparthi, Jahnavi, Fall of 2006, Jointly Analyzing Gene Expression and Copy Number Data in Breast Cancer Using Data Reduction Models
4. Rachakonda, Venu, Microarray CGH analysis.
5. Stuerke Cecil, Low Resolution Technique for Fast Identification of Carotid Artery in Computed Tomography

Students Mentoring in the industry before joining UMKC

I have mentored the following students during their internship at the ADIR.LLC, in Houston, TX.

1 Liu Zhongming and Hua Jianping, PhD students, EE Dept., Texas A&M University
2 Choi Hyohoon and Mehul Sampat, PhD students, ECE dept., University of Texas at Austin.
3 Vermolen Bart , PhD student, Delft University of Technology
4 Li Xianyou, Master student, CS, University of Houston in Clear Lake.

PROFESSIONAL SERVICE

Technical Committee

Member of Machine Learning for Signal Processing technical committee of the IEEE Signal Processing Society, 2006-2008
Member of the technical committee on signal processing, Chinese Geophysical Society, 1996-present.
President of Pride of Clear Lake Toastmaster Club, Houston, TX, 2001-2002.

Membership of recent conference program committee since 2007

1. 2007 International Workshop on Machine Learning for Signal Processing, Aug. 27-29, 2007, Thessaloniki, Greece.
2. IEEE Workshop on Genomic Signal Processing and Statistics, Finland, 2007
3. International Workshops on Machine Learning in Biomedicine and Bioinformatics (ICMLA'07), Dec. 13-15, Cincinnati, Ohio, 2007
4. ACM CIKM workshop "Data and Text Mining in Bioinformatics" (DTMbio'07), 2007
5. IEEE International Conference on Bioinformatics and Biomedicine (BIBM), November 2-4, 2007 in San Jose, California
6. The 7th International Workshop on Data Mining in Bioinformatics (BIOKDD '07), in conjunction with ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (SIGKDD'07), August 12th, 2007, San Jose, CA
7. IEEE workshop on "Mining and Management of Biological Data" (MMBD). MMBD will be held in Omaha, Nebraska, USA on October 28th, 2007 and will be held in conjunction with the 7th International Conference on Data Mining (ICDM)
8. 2008 IEEE Region 5 Technical, Professional and Student Conference, April. 17-20, Kansas City, MO.
9. 2008 IEEE World Congress on Computational Intelligence (WCCI 2008) to be held at the Hong Kong, June 1-6, 2008.
10. International Conference on Bioinformatics, Computational Biology, Genomics and Chemo informatics (BCBGC-08), 7-10 of July 2008 in Orlando, FL, USA
11. The 2008 International Conference on Bioinformatics and Computational Biology (BIOCOMP'08): July 14-17, 2008, Las Vegas, USA
12. Fourth International electronic Conference on Computer Science 2008 (IeCCS 2008). (http://www.ieccs.net/)
13. IEEE International Conference on Bioinformatics and Biomedicine (BIBM), November 7-9, 2008, in Philadelphia, PA.
14. 2008 IEEE International Workshop on Machine Learning for Signal Processing, Oct. 16-19, 2008, Cancun, Mexico.
15. The Seventh International Conference on Machine Learning and Applications, December 11-13, 2008, San Diego, California, USA.
16. International Joint Conferences on Bioinformatics, systems biology and intelligent Systems (IJCBS) September 24-27, 2009, Shanghai, China

17. International Conference on Bioinformatics, Computational Biology, Genomics and Chemo informatics (BCBGC-08), July 2009 in Orlando, FL
18. IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS'2009), May 17 –21, 2009, Minneapolis, Minnesota.

19. 2009 IEEE International Workshop Machine Learning for Signal Processing (MLSP'09), September 2-4 2009, Grenoble, France
20. IEEE International Conference on Bioinformatics and Biomedicine (BIBM09), Washington DC, USA, Nov. 1-4, 2009

Organizers of the workshops

1. 2004 IEEE International Symposium on Biomedical Imaging: From Nano to Macro. (Co-organizer with Robert F. Murphy of CMU on special session on genetic imaging)
2. Wavelets and Signal Processing, National University of Singapore, Sept. 1998.
3. Geometric Analytic Methods in Image Processing, National University of Singapore, Feb. 1999.

Editorship

Guest editor (with Prof. Hu Y. H., Univ. Of Wisconsin, Madison) for the Journal of VLSI Signal Processing-Systems for Signal, Image, and Video Technology Special issue on Genomic Signal Processing, 38(3), Nov, 2004 (Guest editorial)

Review for funding agencies

Ad hoc grant reviewer for the National Institute of Health (NIH).
Reviewer and panelist for NSF CCF program
Reviewer for the University of Missouri Research Board, 2004-present
Reviewer for the Science and Technology Development Program, North Carolina Biotechnology Center

Book Review

Genomic Signal Processing, Edward Dougrhety and Ilya Shmulevich, Princeton University Press, 2002.
Medical Image Analysis, Second Edition, Atam Dhawan, John Wiley & Sons, Inc., 2009

Journal Review (above 100 papers for over 25 journals)

I have been a regular reviewer for over 25 journals including

IEEE Trans. Signal Processing,
IEEE Trans. Signal Processing Letters,
IEEE Trans. Image Processing,
IEEE Trans. Pattern Analysis and Machine Intelligence,

IEEE Trans. Medical Imaging
*IEEE Trans. Biomedical Engineering (**Got the appreciation letter for reviewing three papers within one month period from the Editor in Chief, 2004**).*
IEEE Trans. Circuit and System for Video Technology
IEEE Trans. Multimedia
IEEE Trans. Signal Processing Magazine
Signal Processing
Applied and Computational Harmonic Analysis
Journal of Fourier Analysis and Applications
Computers in Biology and Medicine
International Journal of Biomedical Imaging
Cytometry, part A
Journal of Technology in Cancer Research and Treatment
Computer Vision and Image Understanding
International Journal of Image and Graphics
Circuits, Systems and Signal Processing
Journal of X-Ray Science and Technology
Science in China
Journal of ZheJiang University, English edition. China
International Journal of Data Mining and Bioinformatics
EURASIP Journal on Bioinformatics and Systems Biology
Frontiers in Bioscience, in the Encyclopedia of Bioscience

In addition, I have reviewed numerous conferences in the area of signal/image processing and wavelets such as ICASSP, ICIP and ISBI.

Consultant to the industries

Advanced Digital Imaging Research, LLC, League City, TX
Midwest Cardiovascular Technologies, Kansas City, MO
Spectral Genomics Inc, Houston, TX

University Service

1. New Faculty Teaching Scholarship, 2004
2. Graduate and doctoral faculty member, 2004-present
3. Computational Biology and Bioinformatics Committee working with Dean William Osborne, 2003
4. Faculty Budget Advisory Committee, UMKC, 2005-2006
5. Bioinformatics faculty searching Committee, School of Medicine, 2006-2008
6. Collaborating Member of CRISP, UMKC school of Density, 2003-present
7. Member of Geosciences Information Certificate Program, Dept. of Geosciences, 2006
8. Mentor of Eric Akers from ECE of University of Kansas (KU), preparing for the future faculty program, 2006-2007

9. Curriculum development committee on the development of bioinformatics and bioengineering course, 2007
10. Biomedical engineering program development committee with Associate Dean Sohraby, 2008.

Community service

1. Attended the Project lead the way at Summit Technology Academia , Lee's Summit, Oct. 29, 2004
2. 19th Science Pioneer's Meet the Mentor Day, Union Station, Oct, 2005

International collaborations

Member of external examination committee of PhD program, Xi'an Jiaotong University, P.R. China
Collaborating member of Molecular Genetics group at the Chendu University of Traditional Chinese Medicine

List of some collaborators within UMKC and Kansas City Community (through joint papers and proposals).

Merlin Butler and Douglas Bittel, Children's Mercy Hospital, Kansas City,
Oliver Pourquite, Scott Hawley, Jennifer Gerton, Stowers Institute for Medical Research, Kansas City,
J. Chen, L.Katz, P. Spencer, Y. Wang, Sarah Dallas, Linda Bonewald, ChinMin Huang and Hong-Wen Deng, UMKC Art and Science, Dental and Medical Schools
Diane Persons, Director of Cytogenetics, Kansas University Medical Center (KUMC).

Invited talks and presentations (Selected since 2000)

1. Multiscale and multimodality genomic image informatics, Dept. of Computer Science, University of Missouri, Columbia, Oct. 29, 2009.
2. Splines and wavelets for biomedical image analysis, Dept. of ECE, University of New Mexico, Sept. 25, 2009.
3. Multiscale and multimodality genomic image informatics, The Mind Research Network, New Mexico, Sept. 24, 2009.
4. Multiscale and multimodality genomic image analysis, School of Computer Engineering, Nanyang Technological University (NTU), Aug. 11, 2009.
5. Multi-modality Genomic imaging Informatics, Institute of Systems and Informatics, Xi'an Jiaotong University, China, July 29, 2009.
6. High resolution genomic imaging powered by computational image analysis, IEEE Computer Science Society-Kansas City Section, Overland Park, Sep. 18, 2008.
7. Systems genomics driven by multi-modality imaging, Dept. of Automation, Shanghai Jiaotong University, July 22, 2008.

8. Systems biology with multi-modality imaging, CAS-MPG Partner Institute for Computational Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, July 21, 2008.
9. Seminar in the genomic research group, UMKC School of Medicine, March 21, 2008.
10. 2008 IMA workshop on Organization of Biological Networks, Univ. of Minnesota, March 3-7, 2008.
11. Talk on Systems genomics driven by multimodality imaging, Molecular Genetics Group, Chilldren's Mercy Hospital and Clinics (CMH), Nov. 1, Kansas City, 2007.
12. Bioinformatics and computational Biology group, Translational Genomics Research Institute (Tgen), April 20, Phoenix, AZ, 2007.
13. Center for Evolutionary Functional Genomics, Dept. of Computer Science & Engineering**,** April 20**,** Arizona State University, 2007.
14. Dept. of ECE, Colloquium, Feb. 26, University of Kansas, 2007.
15. Dept. of Math. Seminar, National University of Singapore, July 19, 2006.
16. Talk on high resolution genetic imaging at the Workshop on Algorithmic Biology: Algorithmic Techniques in Computational Biology, the Institute for Mathematical Science (IMS) of National University of Singapore, July 14, 2006.
17. CS and Math Dept. Colloquium, University of Missouri- St. Louis, March, 2006.
18. Frontier in Imaging workshop, University of Minnesota, IMA Annual Program Year Workshop on Imaging, 2005
19. Oral Biology Seminar, School of Dentistry, University of Missoiri-Kansas City, 2005
20. School of Computing and Engineering, University of Missouri-Kansas City, Sep. 2005
21. Institute of Automation, Chinese Academia of Sciences, China, June, 2005.
22. School of Mathematical Sciences, Xi'an Jiaotong Unviersity, China, May 2005.
23. Institute of Pattern Recognition and Image Processing, Shanghai Jiaotong University, China, May 2005.
24. Midwest Cardio-Vascular Technology, LLC, Kansas City, Nov., 2004.
25. Second International Conference on Computational Harmonic Analysis, Vanderbilt University, TN, 2003.
26. Physics Dept. Seminar, University of Missouri-Kansas City, 2003.
27. CS Dept., University of Houston-Downtown, Feb., 2003.
28. ECE Department, University of Oklahoma, July, 2002.
29. Statistics Department, University of Pennsylvania, Philadelphia, Jan. 1, 2000.
30. Dept. of Math, Washington University, St. Louis, March 2000.
31. Dept. of Electrical Engineering, Texas A&M Univ., July, 2000.

32. IEEE Workshop on Mathematical Methods in Biomedical Image Analysis. Hilton Head Island, SC. 2000.

33. A tutorial on application of Spline and Wavelets to image processing, Annual Cytometry Development Workshop, Pacific Grove, CA, Oct. 2000.

LIST OF PUBLICATIONS (Recent papers are available online at: http://www.csee.umkc.edu/~wangyup/), Total: 94 publications as of October 2009**.**

Book Chapters

1.Yasheng Chen, Yu-Ping Wang and A. A. Amini, Tagged MRI Image Analysis from Splines, chapter 8, "Measurement of Cardiac Deformation from MRI: Physical and Mathematical Models, eds. A.A Amini and J.L. Prince, Kluwer Academic Publishers, 2001.

2.Yu-Ping Wang, Chapter 5 in Wavelet Theory and Its Applications, *Xidian University Press,* China, 1993.

3. Chris Wyat, Yu-Ping Wang, Merray Loew, and Yue Wang, Medical Imaging enhancement, invited book chapter 7, Biomedical Information Technology, in *Elsevier-Academic Press Series in Biomedical Engineering*, 2007.

4. Yu-Ping Wang, Qiang Wu, and Ken Castleman, Microscopic image enhancement, invited Book Chapter of Microscopic Image Analysis, edited by Qiang Wu, Fatima Merchant and Ken Castleman, in *Elsevier-Academic Press*, 2008.

Journal publications

Note: According to an ISI web index, IEEE Trans. Medical imaging has the highest impact factor among all the IEEE transactions.

1. Yu-Ping Wang, Multiscale genomic imaging informatics, *IEEE Signal Processing Magazine, Nov.-Dec issue, pp. 169-172, 2009.*

2. Jie Chen and Yu-Ping Wang, A statistical model-based approach for the identification of DNA copy number changes in array CGH datasets, *IEEE Trans. Computational Biology and Bioinformatics, 6(4), Oct-Dec issue, 2009.*

3. Ranganathan Parthasarathy, Ganesh Thiagarajan, Xiaomei Yao, Yu-Ping Wang, Paulette Spencer and Yong Wang, Application of Univariate and Multivariate Analyses in Micro-Raman Imaging to Unveil Structural/Chemical Features of the Adhesive/Dentin Interface, *J. of Biomedical Optics*, 13(1), 2008.

4. F. Zhang, Yu-Ping Wang, and HW Deng, Comparison of Population-Based Association Study Methods Correcting for Population Stratification, *PLoS ONE*, 3(10):1-7, 2008.

5. Y. Guo, J. Li, A J. Bonham, Y.-P. Wang, and HW Deng, Gains in power for exhaustive analyses of haplotypes using variable-sized sliding window strategy: a comparison of association-mapping strategies, *Eur. J. Human Genetics*, Dec., 17, 2008.

6. Y.-P.Wang, M. Gunampally, J. Chen, D. Bittel, M. Butler and W.-W. Cai, A Comparison of Fuzzy Clustering Approaches for Quantification of Microarray Gene Expression, *Journal of VLSI Signal Processing Special Issue on Machine Learning for Microarray and Sequence Analysis*, 50: 305-320, 2008.

7. Yu-Ping Wang, Husain Ragib, and Chi-Ming Huang, A wavelet approach for the identification of axonal synaptic varicosities from microscope images, *IEEE Trans. Information Technology in Biomedicine*, May, 11(7): 296-304, 2007.

8. Yu-Ping Wang and Ashok Dandpat, A Hybrid Approach of Using Wavelets and Fuzzy Clustering for Classifying Multi-spectral Florescence in Situ Hybridization Images, *Int. Journal of Biomedical Imaging*, vol. 2006, pp. 1-11, 2006.

9. P.Sivakumar, A.Czirok, B.J.Rongish, V.P.Divakara, Y.-P.Wang and S.L.Dallas, New Insights into Extracellular Matrix Assembly and Reorganization from Dynamic Imaging of Extracellular Matrix Proteins in Living Osteoblasts, *Journal of Cell Science* , 119:1350-1360, 2006.

10. Huang**,** C**.** Titus, J.A. Wang, Y. and Huang, R. Information Coding Capacity of Cerebellar Parallel Fibers, *Brain Research Bulletin*, 70(1), Pages 49-54, 2006.

11. Yu-Ping Wang, Y. Wang and P. Spencer, Fuzzy Clustering of Raman Spectral Imaging Data with a Wavelet-Based Noise Reduction Approach, Applied Spectroscopy, 60(7), 60(7), 2006.

12. Yu-Ping Wang and Ken Castleman, Automated Registration of Multi-Color Fluorescence In Situ Hybridization (M-FISH) Images for Improving Color Karyotyping, *Cytometry, Part A, 64A(2), April, 2005.* [PDF file].

13. Yu-Ping Wang, J. Chen, Q. Wu and Ken Castleman, Fast frequency estimation by zero-crossings of differential spline wavelet transform, *EURASIP Journal on Applied Signal Processing*, 2005(8): 1251-1260, *May, 2005* [PDF file].

14. Yu-Ping Wang and Wei-Wen Cai, Genetic imaging: where imaging science meets cytogenetic research, *Biophotonics Magazine, Nov., 2004* [PDF file].

15. Yu-Ping Wang, Q. Wu, Ken. Castleman, and Z. Xiong , Chromosome Image Enhancement Using Multiscale Differential Operators , *IEEE Trans. Medical Imaging*, vol. 22, no.5, May, 2003.[PDF file], [Demo link].

16. Z. Liu, Z. Xiong, Q. Wu, Y. Wang, and K. Castleman, Cascaded differential and wavelet compression of chromosome images, *IEEE Trans. on Biomedical Engineering*, vol. 49, no. 4, 2002. [PDF file]

17. Yu-Ping Wang, Y. Chen, A. A. Amini, Efficient LV Motion Estimation using Subspace Approximation Techniques, *IEEE Trans. Medical Imaging*, vol. 20, no.6, June 2001.[PDF file]

18. Yu-Ping Wang, S. L. Lee, Scale-space derived from B-splines, *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 20, no. 10, Oct. 1998, pp.1050-1065. [PDF file]

19. Yu-Ping Wang, Qu Ruibin, Initialization and inner product computation of wavelet transform using interpolatory subdivision scheme, *IEEE Trans. Signal Processing*, vol. 47, no. 3, p. 817, 1999. [PDF file]

20. Yu-Ping Wang, S. L. Lee, K. Torachi, Multiscale curvature based shape representation using B-spline wavelets, *IEEE Trans. Image Processing*, vol. 8, no 11, 1999. pp. 1586-1592. [PDF file]

21. Yu-Ping Wang, Image representations using multiscale differential operators, *IEEE Trans. Image Processing*, vol. 8, no. 12, 1999, pp. 1757-1771.[PDF file]

22. Yu-Ping Wang, Qu Ruibin, Fast implementation of scale-space by interpolatoy subdivision scheme, *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 21, no. 9, 1999 pp.1050-1065. [PDF file]

23. Jun-Feng Guo, Yuan-Long Cai, Yu-Ping Wang, "Morphology-Based Interpolation for 3-D Medical Image Reconstruction," *Computerized Medical Imaging and Graphics*, vol.19, no.3, pp. 267-279, 1995. [PDF file]

24. Yu-Ping Wang and Gui-Zhong Liu, "Computation of Continuous Wavelet Transform by Interpolation," *Journal of Electronic Science and Technology*, no.3. pp. 42-44, September 1993.

25. Long Gong ,Yu-Ping Wang and Zheng Tan, "A Zero-Crossing Edge Detection Operator with Variable Scale and Orientation," *Journal of Data Acquisition and Processing*, vol.10, no.3, pp.175-180, 1995.

26. Jin-Feng Guo, Yuan-Long Cai and Yu-Ping Wang, "Investigation of Interpolation Methods for Medical 3D Reconstruction," *Computerized Tomography: Theory and Applications*, vol.3, no.4, pp. 7-11, 1994.

27. Chao-Wei Yuan, Zhao-Yong You and Yu-Ping Wang, "A Novel Algorithm of Inverse Radon Transform," *J. of Electronic Science and Technology*, No.3. pp. 49-54, September 1993.

28. Yu-Hua Peng,Ya-Xun Liu,Yu-Ping Wang, Wen-Bing Wang, "The Application Of Wavelet Transform to Time-Frequency Analysis of Electromagnetic Backscatter Signals," *Acta Electronica Sinica*, vol.23, no.9, pp.109-111,1995.

29. Yu-Ping Wang, Yuan-Long Cai, Zhong-xing Geng and Rui Feng, "Application of Wavelet Packet Transform to Seismic Signal Processing," to appear in *Acta Seismology Sinica*, 1995.

30. Yu-Ping Wang and Yuan-Long Cai, "A Type of B-Spline Wavelet and the Associated Fast Algorithms," to appear at *Signal Processing* (Chinese).

31. Jiehui Yuan, Yu-Ping Wang, and Yuan-Long Cai, The Modeling and Extraction of Visual Primary Components in Images", *China journal of Image and Graphics*, Vol.2, No.8-9, pp.594-598, Sep. 1997.

32. Yu-Ping Wang, "A Wavelet is Creating Great Waves," *Science (Chinese)*, vol.47, no.4, 1995.

33. Yu-Ping Wang, Yuan-Long Cai and Jun-Feng Guo, "Construction of Wavelet Packet Bases and Their Properties," *Journal of Xi'an Jiaotong University*, vol.29, no.4, pp. 26-31, 1995.

34. Yu-Ping Wang and Yuan-Long Cai, "Multiscale B-Spline Wavelet for Edge Detection," *Science in China, Ser. A*, Vol.38, No.4, pp. 499-512, 1995.

35. Yu-Ping Wang and Yuan-Long Cai, "An Overview of Wavelet Transform to Signal Processing," *Radio Engineering*, vol.24, no.3, pp. 11-19, 1994.

36. Yu-Ping Wang and Yuan-Long Cai, "Filtering Based on Wavelet Transform," *Information and Control*, 1996.

Conference papers (peer reviewed)

1.Yu-Ping Wang, Qiang Wu and Su-Shing Chen, Multiscale genomic imaging with wavelets signal analysis, International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing (IJCBS'09), Aug. 3-6, 2009, Shanghai, China.

2. Su-shing chen, Qingfeng Song and Yu-Ping Wang, Genomic Imaging: A Modern Environment for TCM Research, International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing (IJCBS'09), Aug. 3-6, 2009, Shanghai, China.

3.S.-S. Chen and Yu-Ping Wang, Translational Systems Genomics: Ontology and Imaging, *First AMIA Summit on Translational Bioinformatics*, San Francisco, CA, March 15-17, 2009.

4.Yu-Ping Wang, Detection of Chromosomal Abnormalities with Multi-color Fluorescence In Situ Hybridization (M-FISH) Imaging and Multi-Spectral Wavelet Analysis, *30th Annual International IEEE EMBS Conference of the IEEE Engineering in Medicine and Biology Society in Vancouver, British Columbia, Canada, August 20-24, 2008.*

5.Yu-Ping Wang, Integration of Gene Expression and Gene Copy Number Variations with Independent Component Analysis,*30th Annual International IEEE EMBS*

Conference of the IEEE Engineering in Medicine and Biology Society in Vancouver, British Columbia, Canada, August 20-24, 2008.

6.Yu-Ping Wang, Maheswar Gunampally, Jie Chen Douglas Bittel, Merlin G. Butler and Wei-Wen Cai, Accurate Quantification of Gene Expression using Fuzzy Clustering Approaches, *Proceedings of the IEEE International Workshop on Genomic Signal Processing (GENSIPS'07),* Gustavelund, Tuusula, Finland, June 10-12, 2007.

7. Yu-Ping Wang, Classification of Multi-color Fluorescence In Situ Hybridization (M FISH) Images with Multi-Spectral Wavelet Representations, *IEEE 7th International Symposium on Bioinformatics & Bioengineering (IEEE BIBE 2007),* in Boston, Oct. 14-17.

8. Yu-Ping Wang, Identification of amplifications and deletions in array CGH data using a differential wavelet analysis, *IEEE 7th International Symposium on Bioinformatics & Bioengineering (IEEE BIBE 2007),* in Boston, Oct. 14-17.

9. Fazel A., Derakhshani R., and Wang Y., "Classification of Multicolor Fluorescence In Situ Hybridization Images using Gaussian Mixture Models", *Proceedings of ANNIE 2006 Conference,* St. Louis, MO, 2006.

10. J. Chen and Yu-Ping Wang, Detection of DNA copy number changes using statistical change point analysis, *Proceedings of the IEEE International Workshop on Genomic Signal Processing 2006,* May, College Station, TX.

11. Yu-Ping Wang and Ashok Dandpat, Classification of Multi-spectral Florescence in Situ Hybridization Images with Fuzzy Clustering and Multiscale Feature Selection, *Proceedings of the IEEE International Workshop on Genomic Signal Processing 2006,* May, College Station, TX.

12. Yu-Ping Wang, Y. Wang and P. Spencer, A differential wavelet-based noise reduction approach to improve the clustering of hyperspectral Raman imaging data, *2006 IEEE International Symposium on Biomedical Imaging: From Nano to Macro,* April 6-9, Arlinton, VA, 2006.

13.Yu-Ping Wang, Maheswar Reddy Gunampally and Wei-Wen Cai, Automated segmentation of microarray spots using fuzzy clustering approaches, 2005 *IEEE International Workshop on Machine learning for signal processing*, September 28 - 30, Mystic, Connecticut. *Special Session on machine learning for genomic signal processing*, invited paper.

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Poster presentation (non peer reviewed paper)

1. Y.P. Wang, Joint analysis of gene expression and gene copy number variations using independent component analysis, 2008 IMA workshop on Organization of Biological Networks, Univ. of Minnesota, March 3-7, 2008.

2.Y.P. Wang, Y. Wang and P. Spencer, Clustering of hyperspectral Raman imaging data, Oral and Craniofacial Biology. International Symposium, Kansas City, Oct. 9-10, 2006. .

3. Y.P. Wang, Y. Wang and P. Spencer, Clustering of hyperspectral Raman imaging data with a differential wavelet-based noise removal approach, 2005 IMA workshop on Frontier in Imaging, Nov., Univ. of Minnesota.

4. Ragib Husain and Yu-Ping Wang, Bai-Ling Hsu and James Case, Enhancement of Cardiac PET Images Using Wavelet Approaches, 2004 KC Life Sciences Research Day

5. Ashok Kumar Dandpat and Yu-Ping Wang, Multi-resolution Registration With Application To M-FISH Images, 2004 KC Life Sciences Research Day

6. Ashok Kumar Dandpat and Yu-Ping Wang, Comparative Analysis of Classification Algorithms on Segmenting M-FISH Chromosome Images, 2005 KC Life Sciences Research Day

7. Ragib Husain and Yu-Ping Wang, *Chi-Ming Huang, Automated recognition of synaptic varicosities from microscope***,** 2005 KC Life Sciences Research Day, Overland Park Convention Center.

8. Gunampally, Maheswar Reddy and Yu-Ping Wang, Automated segmentation of simulated microarray spots using clustering approaches, 2005 KC Life Sciences Research Day, Crown Center.

Others (Editorial)

1. Wang Yu-Ping, Hu Yu-Heng, guest editorial, *J. VLSI Signal Processing, Special issue on genomic signal processing*, 38,207-209,2004.

RESEARCH GRANT SUPPORT

Funded and ongoing projects at UMKC (~$1.3 million as the PI and ~$1.2 million as the co-PI since 2003)

1. NIH 1R15GM088802-01, Accurate detection of chromosomal abnormalities with multi-color image processing, Role: PI, 09/21/2009-8/20/2012, $241,341.

2. NIH 1R21LM010042-01, A New Paradigm for Integrated Analysis of Multiscale Genomic Imaging Datasets, $404,459., Role: PI, 07/01/2009-06/30/2011, $404,459.

3. NSF, DBI 0849932, Multiscale Genomic Imaging Informatics, Role: PI, 12/01/2009-11/30/2012, $536,175.

4. University of Missouri Research Board, High resolution imaging of chromosome abnormalities, $26,800, Role: PI; 01/01/2005-12/31/2005.

5. UMKC FRG, "High Resolution Probe of Genetic Aberrations Powered by Advanced Image Computing Techniques," Role: PI; $7,000, 6/1/2005-5/31/2006.

6. Kansas City Area Life Sciences Research Institute (KCALSI) Development Grant, Computational imaging technique for integrated molecular karyotyping and gene expression analysis, Role: PI, $25,000, from 1/1/07-12/30/07.

7. Kansas City Area Life Sciences Research Institute (KCALSI) Patton Trust Grant, Rapid and accurate detection of chromosomal abnormalities via multi-color imaging, Role: PI, $50,000, from 10/1/08-8/30/2009.

8. University of Missouri Research Board, Integrated Structure/Property/Function Imaging Platform, $17,300, PI: Wang Yong, Role: co-PI; 12/15/2004-12/31/2005.

9. NIH R03 DE015735-01A1, Dentin/Adhesive Interface Structure/Property Imaging, PI: Wang Yong**,** Role: co-PI, $147,000, 03/01/2005 - 02/28/2007, 15% effort. The grant supports one month summer salary per year and two graduate research assistants.

10. NIH NGA: 1 R13 DK69504-01, Dental Science Research Training Program for Engineers, PI: KATZ, J LAWRENCE**,** Role: co-mentor. **$**648,000, 9/20/2004-7/31/2007.

11. Summer consultant with ADIR (League city, TX) for an NIH SBIR grant through a research gift contract, Role: PI, about $6,125, July, 2005.

12. NIH 1R21AR054449-01A1, Osteocytes as dynamic cells, PI: Sarah Dallas. Role: co-PI, 07/01/2007 - 06/29/2009. $399,233.

Travel support

13. Travel support to attend the "Frontier in Imaging" workshop through the Institute of Mathematical Analysis (IMA) of University of Minnesota through an NSF program, Nov., 2005 (about $500).

14. Travel support to attend the "Mathematical Systems Biology of Cancer" workshop at the Mathematical Science Research Institute (MSRI) of University of California through an NSF program, Berkeley, May 2-6, 2005 (about $780).

15. Travel support to attend the workshop on "Algorithmic Biology: Algorithmic Techniques in Computational Biology. (11 July - 31 July 2006)" by the Institute for Mathematical Science (IMS) of National University of Singapore (about $2000).

16. Travel support to attend the workshop "Image Analysis Challenges in Molecular Microscopy" by the Institute for Pure and Applied Mathematics (IPAM) of University of California in Los Angeles (UCLA) through an NSF program, 1/28-2/1, 2008 (about $1075.6).

17. Travel support from NSF to attend the "Organization of Biological Networks" workshop through the Institute of Mathematical Analysis (IMA) of University of Minnesota through an NSF program, March 3-7, 2008 (about $1086).

Proposals pending

1. NSF IIS 0916702, III-CXT-Small: Multiscale representation and analysis of multi-spectral imaging data with application to integrated genomic image analysis, 09/01/2009-08/30/2012, $444,221. Role: PI, Ranked as competitive and pending for award.

2.NIH 1R01GM081302-01A2 Integrated structural/functional genomic image analysis in Prader-Willi Syndrome, ~$1.5 million. Role: PI, Pending, (last priority score: 263), resubmitted as new proposal in 06/05/2009.

3. NIH 1R21CA131815-01A1 Improved Multicolor Karyotyping with Multispectral Image Processing, ~$400K. Role: PI, Pending, (last priority score: 182).

Selected past research grants (before joining UMKC)

1. NIH SBIR Grant (5R44HD33658-03): Wavelet Enhancement of Chromosome Banding Patterns (Phase 2), co-investigator.

2. NIH SBIR Grant (1R43GM/CA62724-01): Wavelet-Based AROS Compression of Cytogenetic Images (Phase 1), co-investigator.

3. NIH SBIR Grant (1R43 HD38151 -02): Improved classifier for automated multiplex FISH (Phase 2), co-investigator.

4. 1996-1999: Computer vision and medical image processing using wavelets technique, WSRP programme funded by NSTB and DOE of Singapore, PI of a sub project.

5. 1995-1996: Denoising of seismic signals using multiresolution technique, funded by Henan Oil field Co., China (RMB 20,000), PI.

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