

## **NAME AND PRESENT POSITION**

Yunmei Chen, Professor of Mathematics

## **Research Interest**

Partial Differential Equations, Nonlinear Analysis, Mathematical Methods in Image Analysis.

## **EDUCATIONAL BACKGROUND**

Ph.D., Mathematics, Fudan University, Shanghai, China, 1985

M.S., Mathematics, Tongji University, Shanghai, China, 1981

B.S., Mathematics, Fudan University, Shanghai, China, 1967

## **EMPLOYMENT**

Professor, University of Florida, 1995-present

Associate Professor, University of Florida, 1992-1995

Assistant Professor, University of Florida, 1991-1992

Visiting Professor, SISSA, Italy, 1989-1991

Post-Doctoral Fellow, International Centre for Theoretical Physics, Italy, 1986-1989

## **HONORS**

- University of Florida Research Foundation Professorship for the years 2003-2006
- Gibson Term Professorship for the years 2001-2002
- The best paper award in the 5th World Multi-conference on systemics, Cybernetics and Informatics, Orlando, USA, July 22-25, 2001
  - Winner of TIP Award for distinguished teaching at University of Florida in 1998-1999.
  - The third prize for Natural Science Award awarded by the National Science and Technology Committee of People's Republic of China, Dec. 1997.
  - Winner of TIP Award for distinguished teaching at University of Florida in 1994-1995.
  - The first prize for Advancement of Science and Technology awarded by the National Education Committee of People's Republic of China, Jan. 1993.

## **CONTRACTS AND GRANTS**

### A. Funded Externally

**NSF/DMS** 9/15/2011-9/14/2014, Co-PI, Collaborative Research: Fast TV-Regularized Large-Scale and Ill-Conditioned Linear Inversion with Application to PPI, (\$241,579);

**NIH/R01**, 07/01/06 - 06/30/11, Co-Investigator, Segmentation of Ultrasound Images, (\$1,556,175, 10% FTE);

**NIH/R01**, 4/1/2006-12/30/2011, Co-Investigator, Biochemical Markers of Traumatic Brain Injury, (\$5,099,083, 10% FTE);

**NSF/CCF**, 10/1/2005-9/30/2007, Co-PI, MSPA-MCS: Mathematical and Computational Algorithms for Visualization of Human Brain Neural Pathways, (\$193,615);

**Research Support:** from ViewRay Inc., 8/15/06-8/15/07, \$50,000.

**Contract:** 3/1/06-8/15/06, PI, Research Agreement between ViewRay Inc and the University of Florida: Deformable registration registration in radiotherapy, \$25,000.

**NSF (Analysis)**, 2005, Co-PI, Conference on Partial Differential Equations and Applications, (\$14,700);

**NIH/R01**, 4/1/2002-3/31/2006, Co-Investigator, *Algorithms for Automatic Fiber Tract Mapping in Central Nervous System*, (\$1,369,534, 22% FTE);

**NIH/P50**, 6/1/2000-5/31/2005, Co-Investigator, *Treatment of Aphasia and Related Disorders*, Core B: *Neuroimaging*, (\$6,006,497, 7.5% FTE);

**NSF (Applied Mathematics)**, 2003-2004, Co-PI, University of Florida 2003/2004 Special Year in Mathematics, (\$30,000);

**Contract**, 1/1/2003-12/10/2003, PI, Contract with MRI Device Corporation, *Research Agreement between MRI Device Corporation and the University of Florida/Parallel Noise Encoding*, (\$34,906);

**Contract**, 1/1/2002-12/31/2002, PI, Contract with MRI Device Corporation, *Research Agreement between MRI Device Corporation and the University of Florida/Parallel Noise Encoding*, (\$55,118);

**Contract**, 12/2000-12/2001, PI, Research Agreement between MRI Device Corporation and the University of Florida, (\$63,214);

**NSF (IGMS)**, 1999-2000, PI, Interdisciplinary study in image and signal processing, (\$93,000);

**NSF (Analysis)**, 1997-2000, PI, gradient like flows, (\$72,210);

**NSF (SCREMS)**, 1998, Co-PI, Mathematical Methods in Imaging, (\$34,640);

**NSF (Analysis)**, 1994-1997, PI, weak flow of harmonic maps, (\$60,000);

**NSF (Analysis)**, 1992-1994, PI, heat flow of harmonic maps, (\$30,000).

#### b. Funded Internally

Opportunity Fund from UF, 06/01/2009-05/31/2011, CO-PI, *A Portable, Wearable, Fast, Magnetic Resonance Imager*, (\$90,298);

Opportunity Fund from UF, 5/1/2000-5/1/2002, PI, *A PDE Based Method for Automatic Boundary Determination on 2-D Echocardiographic Images*; (\$36,820).

#### **Ph.D. STUDENTS ADVISEMENT AND PLACEMENT:**

2000: Stacey Levine, Associate Professor, Department of Mathematics and Computer Science, Duquesne University, Pittsburgh, PA

2003: Thomas Wunderli, assistant professor, American University of Sharjha, Sharjha, UAE

2004: Feng Huang, Research Scientist, Invivo Diagnostic Imaging, Philips Gainesville, FL

2005: Sheshadri Thiruvankadam, IPAM Postdoc, UCLA., Los Angeles, CA. Current position: research scientist at GE Research, Bangalore, India

2005: Jung-ha An, IMA Postdoc, University of Minnesota, Minnesota, MN, Current position: assistant professor, Department of Mathematics, California State University, Stanislaus, CA

2006: Christopher Tweddle, assistant professor, University of Evansville, Evansville, IN

2007: Weihong Guo, assistant professor, Department of Mathematics Case Western Reserve University, Cleveland, Ohio

2007: Pengwen Chen, Postdoc., Department of Mathematics, University of Connecticut, Storrs, Connecticut

2008: Qingguo Zeng, Scientist, ViewRay Inc., Beachwood, Ohio

2009: Junyi Xia, Co-Chair, Medical Physics Resident, Department of Radiation Oncology, University of Iowa Hospitals and Clinics, Iowa City, Iowa

2011: Xiaojing Ye, Postdoc., Department of Mathematics, Georgia Tech, Atlanta, Georgia.

## **OTHER PROFESSIONAL SERVICES**

Editorial Board for the SIAM Journal on Imaging Sciences

Editorial Board for the AIMS journal on Inverse Problem and Imaging

Reviewer for Mathematical Review

## **PATENT**

F.Huang, G.R.Duensing, Y.Chen, Method for applying an In-painting technique to correct images in parallel imaging, US patent 7,230,429 B1. 06/12/2007;

Yunmei Chen and Xiaojing Ye, Fast MR Image Reconstruction in Partially Parallel Imaging. U.S. Patent, Serial No.: 61/409,273, 2010.

M.Davison, Y.Chen, J.Dobson, K.White, Systems and Methods for Detecting the Presence of Iron Within Tissue, U.S. Patent, Serial No.: 61/531,276, 2011.

## **PUBLICATIONS**

### **A. Books, Co-authored**

N.Paragios, Y.Chen, and O.Faugeras, Handbook of Mathematical Models in Computer Vision, *Springer Verlag*, (2006).

T.Li and Y.Chen, Global Classical Solutions for Nonlinear Evolution Equations, *Pitman Monographs and Surveys in Pure and Applied Mathematics*45, Longman Scientific & Technical, (1992).

T.Li and Y.Chen, Nonlinear Evolution Equations *Science Press*, Beijing, China, (1990).

### **B. Book Chapters**

B.C.Vemuri and Y.Chen, PDE-based Algorithms for Simultaneous Image Registration and Segmentation, book chapter in *Geometric Level Set Methods in Imaging, Vision and Graphics*, Springer Verlag, (2003), 251-271.

Y.Chen, Characterization of Diffusion Anisotropy in DWI, book chapter in *Handbook of Mathematical Models in Computer Vision*, Springer Verlag, (2006), 487-502.

Y.Chen and X.Ye, Inverse Consistent Deformable Image Registration, *Development of Mathematics, The Legacy of Alladi Ramakrishnan in the Mathematical Sciences*, Springer-Verlag, (2010), 419-440.

### C. Refereed Papers

Y.Chen, D.T.Phan, W.W.Hager, F.Huang, X.Ye, and W.Yin, A Fast Algorithm for Image Reconstruction with Application to Partially Parallel MR Imaging, *SIAM Journal on Imaging Sciences*, (to appear).

F.Chen, Y.Chen and H.D.Tagare, A New Framework of Multiphase Segmentation and Its Application to Partial Volume Segmentation, *Applied Computational Intelligence and Soft Computing*, Vol. 2011, Article ID 786369, 11 pages, (2011). doi:10.1155/2011/786369.

I.Posirca, Y.Chen, C.Z.Barcelos, A new stochastic variational PDE model for soft MumfordShah segmentation, *Journal of Mathematical Analysis and Applications*, Vol.384 (1), (2011), 104-114.

J.Huang, X.Yang, and Y.Chen, A fast algorithm for global minimization of maximum likelihood based on ultrasound image segmentation, *Inverse Problem and Imaging*, Vol.5 (3), (2011), 645-657.

X.Ye, Y.Chen and F.Huang, Computational Acceleration for MR Image Reconstruction in Partially Parallel Imaging, *IEEE Transactions on Medical Imaging*, Vol.30 (5), (2011) 1055-1063.

Y.Ouyang, Y.Chen and Y.Wu, A Spatial Regularization Framework of Orientation Diffusion Functions Using Total Variation and Wavelet, Proceedings of the 8th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, March 30-April 2, 2011, Chicago, Illinois, USA, *ISBI*, (2011) 272-275.

X.Ye, Y.Chen, W.Lin, and F.Huang, Fast MR Image Reconstruction for Partially Parallel Imaging with Arbitrary k-Space Trajectories, *IEEE Transactions on Medical Imaging*, Vol. 30(3), (2011), 575-585.

M. Rao, S.Seth, J.Xu, Y.Chen, H.Tagare, and J.C.Prncipe, A test of independence based on a generalized correlation function, *Signal Processing*, Vol.91(1), (2011), 15-27.

F.Huang, Y.Chen, W.Yin, W.Lin, X.Ye, W.Guo, and A.Reykowski, A Rapid and Robust Numerical Algorithm for Sensitivity Encoding with Sparsity Constraints: Self-feeding Sparse SENSE, *Magnetic Resonance in Medicine*, Vol. 64, No. 4, (2010), 1078-1088.

F.Chen and Y.Chen, A Stochastic Variational Model for Multi-phase Soft Segmentation with Bias Correction, *Advanced Modeling and Optimization*, Vol. 12 (3), (2010), 339-345.

Y.Chen, X.Ye and F.Huang, A Novel Model and Fast Algorithm for MR Image Reconstruction with Significantly Under-Sampled Data, *Inverse Problem and Imaging*, Vol.4, No.2, (2010), 223-240.

F.Chen and Y.Chen, A Multi-phase Soft Segmentation Based on Bi-direction Projected PDHG Method, *Proceedings of International Conference on Image Processing, Computer Vision, & Pattern Recognition*, July 12-15, 2010, Las Vegas, USA, (2010), 486-491.

J.Shi, Y.Chen, M.Rao and J.S.Lee, A statistical similarity measure for non-rigid multi-modal image registration *Proceedings of SPIE Medical Imaging*, San Diego, California, USA, 13 - 18 February, 762307 (2010);

K.H.Zou, H.Du, S.Sidharthan, L.M.DeTora, Y.Chen, A.B.Ragin, R.R.Edelman, Y.Wu, Statistical Evaluations of the Reproducibility and Reliability of 3-Tesla High Resolution Magnetization Transfer Brain Images: A Pilot Study on Healthy Subjects, *International Journal of Biomedical Imaging*, doi:10.1155/2010/618747, (2010), 1-11.

T.McGraw, B.Vemuri, E.Ozarslan, Y.Chen and T.Mareci, Variational Denoising of Diffusion Weighted MRI, *Inverse Problems and Imaging*, Vol. 3(4), (2009), 625-648.

X.Ye and Y.Chen, A New Algorithm for Inverse Consistent Image Registration, *Lecture Notes in Computer Science* 5875, Springer-Verlag (2009), 2420-2423.

4. X.Ye, Y.Chen and F.Huang, Image Reconstruction via Sparse Representation: Modeling and Algorithm. *Proceedings of International Conference on Image Processing, Computer Vision, and Pattern Recognition*, Las Vegas, USA, July 13-16 (2009), 10-16.

C.Barcelos, Y.Chen, and F.Chen, A soft multiphase segmentation model via Gaussian mixture, *Proceedings of IEEE International Conference on Image Processing*, Cairo, Egypt, November 7-10, (2009)

P.Chen, Y.Chen and M.Rao, Metrics defined by Bregman Divergences, *Communications in Math Sciences*, Vol.6 (4), (2008) 915-926.

P.Chen, Y.Chen and M.Rao, Metrics defined by Bregman Divergences, part 2, *Communications in Math Sciences*, Vol.6 (4), (2008) 927-948.

Y.Chen, W.Guo, Q.Zeng, Y.Liu, A nonstandard smoothing in reconstruction of apparent diffusion coefficient profiles from diffusion weighted images, *Inverse Problems and Imaging Journal* (2008), No. 2, 205-224.

W.Guo, Y.Chen, Q.Zeng, A geometric flow based approach for diffusion tensor image segmentation, Theme Issue Mathematical and statistical methods for diagnoses and therapies, *Philosophical Transactions of the Royal Society A*, Vol.366, No.1874 (2008), 2279-2292.

P.Chen, Y.Chen and M.Rao, A novel distribution classifier, *Journal of Mathematical Analysis and Applications*, Vol 342/2, (2008), 915-930.

X.Ye and Y.Chen, Improvement of Accuracy in Deformable Registration in Radiation Therapy, *Proceedings of IEEE 15th International Conference on Image Processing*, San Diego, California, USA, October 12-15,(2008) 2420-2423.

F.Chen, Y.Chen and H.D.Targare, An Improvement of the Sine-Sinc Model Based on

Log-Likelihood, *Proceedings of International Conference on Image Processing, Computer Vision, and Pattern Recognition*, Las Vegas, Nevada, USA, July 14-17, (2008), Vol. 1, 222-227.

Y.Chen, G.Fu, and R.Wu, Integration of Functional Mapping and Delay Differential Equations to Map the Genes that Regulate Circadian Rhythms, *Proceedings of International Conference on Bioinformatics, Computational Biology, Genomics and Chemoinformatics*, Orlando, FL, USA July 7-10, (2008), 118-125.

Q.Zeng and Y.Chen, Accurate Inverse Consistent Non-rigid Image Registration and Its Application on Automatic Re-contouring, *Proceedings of the 4th International Symposium on Bioinformatics Research and Applications*, Atlanta, GA, USA, May 6-9, 2008, Lecture Notes in Computer Science 4983/(2008), 293-304.

H.D.Tagare, Y.Chen, R.K.Fulbright, Comparison of EM-based and Level Set Partial Volume Segmentations of MR Brain Images, *Medical Imaging 2208, Proceedings of S.P.I.E. Symposium on Medical Imaging*, San Diego (2008), Vol.6914, 69140N, 1-7.

Y.Chen, M.Rao and C.Tweddle, Fenchel Transforms of a Convex Functional, *International Journal of Pure and Applied Mathematics*, Volume 39, No. 3, (2007), 341-362.

Y.Liu, X.Liu, Y.Chen and R.Wu, A computational model for functional mapping of genes that regulate intracellular circadian rhythms, *Theoretical Biology and Medical Modeling*, (2007), 4:5 doi:10.1186/1742-4682-4-5.

J.h.An and Y.Chen, Region based image segmentation using modified Mumford-Shah algorithm, *Lecture Notes in Computer Science* 4485, (2007), 733-742.

P.Chen, Y.Chen, and M.Rao, Kullback Leibler divergence based curve matching method, *Lecture Notes in Computer Science* 4485, (2007), 813-824.

J.Xia, Y.Chen, and S.Samant, The "Juggler Algorithm: A Hybrid Deformable Image Registration Algorithm for Adaptive Radiotherapy, *Proceedings of SPIE Conference on Medical Imaging*, San Diego, CA, February 17-22, Medical Imaging (2007): Physics of Medical Imaging 65105J.

Y.Chen, S.Levine, and M.Rao, Variable exponent, linear growth functionals in image restoration, *SIAM Journal on Applied Mathematics*, 66 (2006), no. 4(1), 383-1406.

Y.Chen, F.Huang, H.D.Tagare, and M.Rao, A Coupled Minimization Problem for Medical Image Segmentation with Priors, *International Journal of Computer Vision*, 71 (2006) 259-272.

X.Zheng, Y.Chen, D.Groisser, and D.Wilson, Nonrigid correspondence and classification of curves based on more desirable properties, *Multi-scale optimization methods and applications, Nonconvex Optimization and its Applications Series*, Springer Verlag, Vol.82 (2006), 397-411

Q.Zeng, Y.Chen, W.Guo, Y.Liu, Recover multi-tensor structure from HARD MRI under bi-Gaussian assumption, *Multi-scale optimization methods and applications, Nonconvex Optimization and its Applications Series*, Springer Verlag, Vol.82 (2006), 379-386

J.h.An, Y.Chen, M.Chang, D.Wilson, and E.Geiser, Generating Geometric Models through Self-Organizing Maps, *Multiscale optimization methods and applications, Nonconvex Optimization and its Applications Series*, Springer Verlag, Vol.82 (2006), 241-250

S.Thiruvenkadam, S.Arcot, and Y.Chen: A PDE Based Method For Fuzzy Classification Of Medical Images, *Proceedings of International Conference on Image Processing*, Atlanta, Oct. 8-11, (2006), 1805-1808.

W.Guo and Y.Chen: Using Non-Parametric Kernel To Segment And Smooth Images Simultaneously, *Proceedings of International Conference on Image Processing*, Atlanta, Oct. 8-11, (2006), 217-220.

W.Guo, Q.Zeng, Y.Chen and Y.Liu, Using Multiple Tensor Deflection to Reconstruct White Matter Fiber Traces With Branching, *Proceedings of IEEE International Symposium on Biomedical Imaging Macro to Nano*, Arlington, Virginia, April 6-9, 2006, 69-72.

Y.Chen, M.Rao, Y.Tonegawa, T.Wunderli, Partial regularity for a selective smoothing functional for image restoration, *SIAM Journal on Mathematical Analysis*, 37 (4) (2005), 1098-1116.

F.Huang, Y.Chen, G.R.Duensing, J.Akao, A.Rubin, and C.Saylor, Application of Partial Differential Equation-Based Inpainting on Sensitivity Maps, *Magnetic Resonance in Medicine* Vol.53 (2005), 388-397.

Y.Chen, W.Guo, Q.Zeng, X.Yan, M.Rao, Y.Liu, Apparent Diffusion Coefficient Approximation and Diffusion Anisotropy Characterization in DWI, *Proceedings of Information Processing in Medical Imaging*, Glenwood Springs, Colorado, July 11-15, (2005), 246-257.

X.Zhang, Y.Chen, D.Groisser, D.Wilson, Some new results on non-rigid correspondence and classification of curves, *Lecture Notes in Computer Science 3757, Proceedings of Energy Minimization Methods in Computer Vision and Pattern Recognition*, St.Augustine, FL, USA, Nov. (2005), 473-489.

S.Thiruvenkadam, D.Groisser and Y.Chen, Non-Rigid Shape Comparison of Implicitly-Defined Curves, *Lecture Notes in Computer Science, Vol. 3752, Proceedings of the Third International Workshop of Variational, Geometric, and Level Set Methods in Computer Vision*, Beijing, China, October 16, (2005), 222-234.

H.Liu, Y.Chen, H.P.Ho, and P.Shi, Geodesic Active Contours with Adaptive Neighboring Influence *Lecture Notes in Computer Science 3750. Proceedings of The 8th International Conference on Medical Image Computing and Computer-Assisted Intervention*, Palm Springs, CA, Oct. (2005), 741-748.

H.P.Ho, Y.Chen, H.Liu, and P.Shi, Point-Based Geometric Deformable Models for Medical Image Segmentation *Lecture Notes in Computer Science 3749, Proceedings of International Conference on Medical Image Computing and Computer Assisted Intervention*, Palm Springs, CA, Oct. (2005), 278-285.

J.h.An, Y.Chen, F.Huang, D.Wilson, and E.Geiser, A Variational PDE Based Level Set Method for a Simultaneous Segmentation and Non-rigid Registration, *Lecture Notes in*

*Computer Science 3749, Proceedings of International Conference on Medical Image Computing and Computer Assisted Intervention*, Palm Springs, CA, Oct. (2005), 286-293.

H.P.Ho, Y. Chen, H. Liu, and P.Shi, Level Set Active Contours on Unstructured Point Cloud, *Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition* San Diego, CA, June 20-26, (2005), 690-697.

M.Rao, Y.Chen, B.C.Vemuri, F. Wang, Cumulative Residual Entropy, a New Measure of Information, *IEEE Trans. on Info. Theory*, Vol. 50 (6), (2004), 1220-1228.

T.E.McGraw, B.C.Vemuri, Y.Chen, M.Rao and T.Mareci, DT-MRI Denoising and Neuronal Fiber Tracking, *Medical Image Analysis*, 8 (2004), 95-111.

Z.Wang, B.C.Vemuri, Y.Chen, and T.Mareci, A Constrained Variational Principle for Direct Estimation and Smoothing of the Diffusion Tensor Field from Complex DWI *IEEE Transactions on Medical Imaging*, (2004), 930-939.

Y.Chen, W.Guo, Q.Zeng, G.He, B.C.Vemuri, Y.Liu, Recovery of Intra-Voxel Structure from HARD DWI, *Proceedings of IEEE International Symposium on Biomedical Imaging Macro to Nano*, Arlington Virginia, (2004), 1028-1031.

Z.Wang, B.C.Vemuri, E.Ozarslan, Y.Chen and T.Mareci, Statistical Analysis of a Non-linear Estimator for ADC and Its Application to Optimizing Diffusion Weighting Factors, *Proceedings of IEEE International Symposium on Biomedical Imaging Macro to Nano*, Arlington Virginia, (2004), 1032-1035.

Y.Chen, W.Guo, Q.Zeng, X.Yan, F.Huang, G.He, B.C.Vemuri, Y.Liu, Estimation, Smoothing, and Characterization of Apparent Diffusion Coefficient Profiles from High Angular Resolution DWI, *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition* (2004), 588-593.

Y.Chen and M.Rao, Minimization problems and associated flows related to weighted p-energy and total variation, *SIAM J. on Math. Anal.*, Vol.34 (5), (2003) 1084-1104.

A. Meyer-Baese, S.Pilyugin and Y.Chen, Global Exponential Stability Analysis for Neural Networks with Different Time Scales, *IEEE Transaction on Neural Networks* , Vol.14 (3), (2003), 716-719.

B.C.Vemuri, J.Ye, Y.Chen and C.M.Leonard, Image registration via level-set motion: applications to atlas-based segmentation, *Medical Image Analysis*, Vol.7(1), (2003), 1-20.

Y.Chen, F.Huang, H.Tagare, M.Rao, D.Wilson and A.Geiser, Using prior shapes and intensity profiles in medical image segmentation, *Proceedings of International Conference on Computer Vision*, Nice, France, (2003), 1117-1124.

F.Wang, B.C.Vemuri, M.Rao and Y.Chen, Cumulative residual entropy, A new measure of information and its application to image alignment, *Proceedings of International Conference on Computer Vision*, Nice, France, (2003), 548-554.

Z.Wang, B.Vemuri, Y.Chen, T.Mareci A Constrained Variational Principle for Direct Estimation and Smoothing of the Diffusion Tensor Field from DWI, *Proceedings of Information Processing in Medical Imaging*, Ambleside, UK, July 20-25, (2003), 660-671.

F.Wang, B.Vemuri, M.Rao, Y.Chen, A new & robust information theoretic measure and its application to image alignment, *Proceedings of Information Processing in Medical Imaging*, Ambleside, UK, July 20-25, (2003), 388-400.

Y.Chen, W.Guo, F.Huang, D.Wilson, A.Geiser, Using prior shape and points in medical image segmentation, *Lecture Notes in Computer Science - Proceedings of Energy Minimization Methods in Computer Vision and Pattern Recognition*, Lisbon, Portugal, July 7-9, (2003), 291-305.

Z. Wang, B.C.Vemuri, Y.Chen, T.Mareci, Diffusion tensor MR image restoration, *Proceedings of Energy Minimization Methods in Computer Vision and Pattern Recognition*, Lisbon, Portugal, July 7-9, (2003), 421-435.

F.Wang, B.C.Vemuri, M.Rao, Y.Chen, Cumulative Residual Entropy, A new Measure of Information; its Application to Image Alignment, *Proceedings of Computer Vision and Pattern Recognition*, Madison (Wisc), USA, June 16-22 (2003).

Z.Wang, B.C.Vemuri, Y.Chen, T.Mareci, Simultaneous estimation and smoothing of the tensor field from DT-MRI, *Proceedings of Computer Vision and Pattern Recognition*, Madison (Wisc), USA, June 16-22,(2003), 461-466.

Y.Chen, F.Huang, D.Wilson and A.Geiser, Segmentation with shape and intensity priors, *Proceedings, Second International Conference on Image and Graphics* August 2002, Hefei, China, (2003), 378-385.

Y.Chen, C.L.Shen, Q.Zhou, Asymptotic behavior of Yang-Mills flow in higher dimensions. *Differential geometry and related topics*, 16-38, World Sci. Publishing, River Edge, NJ, 2002.

Y.Chen and T.Wunderli, Adaptive total variation for image restoration in BV space, *Journal of Mathematical Analysis and Applications*, 272 (2002), 117-137.

Y.Chen, H.Tagare, S.R.Thiruvankadam, F.Huang, D.Wilson, A.Geiser, K.Gopinath and R.Briggs, Using prior shapes in geometric active contours in a variational framework, *International Journal of Computer Vision*, 50(3), (2002), 315-328.

Y.Chen and S.Levine, Image restoration via diffusion tensor and time-delay regularization, *Journal of Visual Communication and Image Representation*, Vol.13, (2002), 156-175.

Y.Chen, Existence and singularities for the flow of H-systems *Journal On Discrete and Continuous Dynamical Systems*, Vol. 8(1) (2002), 219-236

Y.Chen, Existence and singularities for Dirichlet boundary value problems of Landau-Lifshitz equation *Nonlinear Analysis*, Vol 48 ,(2002), 411-426

Y.Chen, S.Thiruvankadam, K.S.Gopinath, and R.W.Brigg, Functional MR image registration using Mumford-Shah functional and shape information, *Proceedings of the 6th World Multiconference on systemics, Cybernetics and Informatic*, July, (2002), Orlando, 580-583.

B.C.Vemuri, Y.Chen, M.Rao, Z. Wang, T.McGraw, T.Mareci, S.J.Blackband and P.Reier, Automatic Fiber Tractography from DTI and its Validation, *IEEE International Symposium on Biomedical Imaging Macro to Nano*, July (2002), 501-504.

B.C.Vemuri, Y.Chen, and Z.Wang, Registration assisted image smoothing and segmentation *Proceedings of the 7th European Conference on Computer Vision*, Copenhagen, Denmark, May (2002), 546-559.

Y.Chen, S.R.Thiruvankadam, F.Huang, K.Gopinath and R.Briggs, Simultaneous segmentation and registration for functional MR images *Proceedings of 16th International Conference on Pattern Recognition*, Quebec city, Canada, Aug. 11-15 (2002), 747-750

B.C.Vemuri, Y.Chen and Z.Wang, Registration assisted image smoothing and segmentation, *Proceedings of the 7th European Conference on Computer Vision*, Copenhagen, Denmark, May (2002), 546-559.

T.McGraw, B.C.Vemuri, Z.Wang, Y.Chen, M.Rao, T.Mareci, Line integral convolution for visualization of fiber tract maps from DTI, *Proceedings of the 5th International Conference on Medical Image Computing and Computer-Assisted Intervention*, Tokyo, Japan, Sep. (2002), 615-622.

Y.Chen, S.Thiruvankadam, K.S.Gopinath, and R.W.Brigg, Functional MR image registration using Mumford-Shah functional and shape information, *Proceedings of the 6th World Multiconference on systemics, Cybernetics and Informatic*, July, (2002), Orlando, 580-583.

B.C.Vemuri, Y.Chen, M.Rao, Z. Wang, T.McGraw, T.Mareci, S.J.Blackband and P.Reier, Automatic Fiber Tractography from DTI and its Validation, *IEEE International Symposium on Biomedical Imaging Macro to Nano*, July (2002), 501-504.

B.C.Vemuri, Y.Chen, and Z.Wang, Registration assisted image smoothing and segmentation *Proceedings of the 7th European Conference on Computer Vision*, Copenhagen, Denmark, May (2002), 546-559.

Y.Chen, S.R.Thiruvankadam, F.Huang, K.Gopinath and R.Briggs, Simultaneous segmentation and registration for functional MR images *Proceedings of 16th International Conference on Pattern Recognition*, Quebec city, Canada, Aug. 11-15 (2002), 747-750.

Y.Chen, C.A.Z.Barcelos and B.Mair, Selective smoothing and segmentation by time dependent penalized total variation *Computer Vision and Image Understanding* Vol. 82, (2001), 85-100

Y.Chen, and P.Bose On the incorporation of time-delay regularization into curvature-based diffusion *Journal of Mathematical Imaging and Vision*, Vol.14, (2001), 149-164

Y. Chen, A. Meyer-Baese, and S. McCullough, Hebbian and Anti-Hebbian Learning for Independent Component Analysis *Proceedings of IEEE International Joint Conference on Neural Networks*, July 15-19, 2001, Washington DC (2001), 920-925.

B.C.Vemuri, Y.Chen, M.Rao, T.McGraw, Z.Wang, T.Mareci, Fiber tract mapping from diffusion tensor MRI *Proceedings of IEEE Workshop in Variational and Level Set Methods in Computer Vision*, July 13, 2001, Vancouver, Canada, (2001), 81-88.

Y.Chen, S.Thiruvankadam, H.Tagare, F.Huang, D. Wilson, and A.Geiser, On the Incorporation of shape priors into geometric active contours *Proceedings of IEEE Workshop on Variational and Level Set Methods in Computer Vision*, July 13, 2001, Vancouver, Canada,

(2001), 145-152.

Y.Chen, D.Wilson and F.Huang, A new procrustes methods for generating geometric models, *Proceedings of the 5th World Multiconference on systemics, Cybernetics and Informatics*, Orlando, USA, July 22-25, (2001) 227-232.

Y.Chen, S.R.Thiruvankadam, F.Huang, K.S. Gopinath and R.W.Briggs, Feature based image registration for functional MR images using prior shape information *Proceedings of the 5th World Multiconference on Systemics, Cybernetics and Informatics*, Orlando, USA, July 22-25, (2001) 221-226

A.Meyer-Baese, Y.Chen and S.McCullough, Hebbian and Anti-Hebbian Learning for Independent Component Analysis *Proceedings of IEEE International Joint Conference on Neural Networks*, Washington DC, USA, July 15-19, (2001) 920-925

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