NAME AND PRESENT POSITION

Yunmei Chen, Distiguished Professor of Mathematics

Research Interest

Optimization and deep learning for data analysis;
Variational methods, theories and applications to image processing;
Partial differential equations, Nonlinear 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

Distinguished Professor, University of Florida, 2015-present
Professor, University of Florida, 1995-2015
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 Term Professorship 2016-2019;
• University of Florida Research Foundation Professorship 2003-2006;
• Gibson Term Professorship 2001-2002;
• The best paper award in the 5th World Multi-conference on systemics, Cybernetics and Informatics, Orlando, USA, July 22-25, 2001;
• TIP Awards for distinguished teaching at University of Florida, 1994-1995, and 1998-1999;
• The third prize for Natural Science Award, National Science and Technology Committee of China, 1997;
• The first prize for Advancement of Science and Technology, National Education Committee of China, 1993.

CONTRACTS AND GRANTS

A. Funded Externally

NSF/DMS PI, 4/15/2022-3/31/2025, Collaborative Research: Algorithms for learning regularizations of inverse problems with high data heterogeneity, ($200,000);

NSF Key personnel, 2/1/2018-1/31/2023, Phase I IUCRC University of Florida: Center for Big Learning, ($750,000);

NSF/DMS PI, 7/1/2017-6/30/2020, PI, Bundle Level Type Gradient Sliding Methods for Large Scale Convex Optimization, ($154,975);

AFOSR/Eglin 9/30/2014-10/27/2018, Co-PI, Air Force Research Laboratory (AFRL) Mathematical Modeling and Optimization Institute Task Order 0042, ($ 1,680,364);

NSF/DMS 9/1/2013-8/31/2017, PI, Accelerated Algorithms for a Class of Saddle Point Problems and Variational Inequality, ($160,000);

NSF/DMS 3/15/2014-3/14/2015, Co-PI, The Third University of Florida SIAM Gators Conference, ($15,300);

NSF/IIP 9/1/2012-8/31/2015, Co-PI, Innovation Transfer of the Portable Nuclear Moment Imaging Platform ($ 598,644);

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, 07/01/2006 - 06/30/2011, 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: 3/1/2006-8/15/2006, PI, Research Agreement between ViewRay Inc and the University of Florida: Deformable registration registration in radiotherapy,($25,000);

NSF (Analysis), 9/1/2005-8/31/2006 , 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), 9/15/2003-9/14/2004, 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/DMS (IGMS), 8/15/1999-8/14/2000, PI, Interdisciplinary study in image and signal processing, ($93,082);

NSF/DMS (SCREMS), 7/1/1998-6/30/1999, Co-PI, Mathematical Methods in Imaging, ($19,640);

NSF /DMS (Analysis), 8/15/1997-8/14/2000, PI, gradient like flows, ($72,210);

NSF/DMS (Analysis), 8/15/1994-8/14/1997, PI, weak flow of harmonic maps, ($60,000);

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

b. Funded Internally

Title: Combining Deep Neural Networks and Large-Scale Brain Data to Predict Human Cognition and Behavior, University of Florida OR-DRD-AI2020, 12/2/2020 12/1/2021, ($50,000);

Title: UF Informatics Institute Support, 1/01/2016-12/31/2017, PI, *First-order Accelerated Gradient Methods with Applications to Data Science Problems*, ($25,742);

The UF Informatics Institute Seed Fund, 5/16/2015 5/16/2016, CO-PI, *Image Informatics for Scanning Tunneling Microscopy and Scanning Tunneling Potentiometry*, ($ 45,000);

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, full professor, Department of Mathematics and Computer Science, Duquesne University, Pittsburgh, PA.

2003: Thomas Wunderli, associate professor, American University of Sharjha, Sharjha, UAE.

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

2005: Sheshadri Thiruvenkadam, senior research scientist at GE Global Research, Bangalore, India.

2005: Jung-ha An, associate professor,Department of Mathematics, California State University, Stanislaus, CA.

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

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

2007: Pengwen Chen, associate professor, Department of Mathematics, National Chung Hsing University, Taiwan.

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

2009: Junyi Xia, (Co-Chair), assistant professor, Department of Radiation Oncology, University of Iowa Hospitals and Clinics, Iowa City, Iowa.

2011: Xiaojing Ye, Associate professor,Department of Mathematics, Georgia State University, Atlanta, Georgia.

2012: Fuhua Chen, Associate professor, Department of Natural Sciences and Mathematics, West Liberty University, West Virginia.

2012: Iulia Posrica, Adjunct, Department of mathematics, Santa Fe College.

2013: Jinseop Lee, Adjunct, Department of mathematics, Santa Fe College.

2013: Ouyang Yuyuang, Associate professor, Department of Mathematical Sciences, Clemson University, SC

2013: Haili Zhang, Senior Image Processing Engineer, Hermes Microvision Inc. San Jose, CA.

2013: Jiangli Shi, Programmer Analyst, TMC Software, Inc. San Francisco, CA

2014: Meng Liu, Data Analyst & Marketing Consultant, Dragon Oil Technologies Inc., Houston, TX.

2016: Hao Zhang, Postdoctoral Researcher, Washington University in St. Louis, MO. (Software Engineer, Google, Seattle, Washington, since 2018)

2017: Wei Zhang, Software Engineer, Google, Mountain View, CA.

2018: Xianqi Li, Postdoctoral Research, Harvard University Medical School, Boston, MA.

2019: Chenxi Chen, Software Engineer, Bloomberg Inc, New York, NY.

2022: Wanyu Bian, Postdoctoral Research, Harvard University Medical School, Boston, MA.

2022: Mehrdad Alvandipour,

2022: Qingchao Zhang,

OTHER PROFESSIONAL SERVICES

Editorial Board for the SIAM Journal on Imaging Sciences, 2007-Dec. 2017;

Editorial Board for the AIMS journal on Inverse Problem and Imaging, 2009-Present;

Editorial Board for the Journal of Mathematical Imaging and Vision, 2016-present;

Guest editor for the special issue series: "Medical Imaging" in Inverse Problem and Imaging, 2009 (with Prof. Tony Chan and Prof. Nikos Paragios), 2010.

Guest editor for the special issue series: "Integrative Approaches in Computational Biomedical Imaging" in computational and Mathematical Methods in Medicine, 2013-2014, and 2014-2015 (with Prof. Huafeng Liu and Prof. Pengcheng Shi).

Reviewer for Mathematical Review; 1992-Present;

PATENT

Patent issued

X.Zhang, Y.Chen, H.Zhang, A.Li and X.Li, Method for Error Correction in Scanning Tunneling Microscope Data, issued on June 2, 2020, as U.S. Patent No. 10,670,625.

B.Lu, Y.Chen, H.Zhang and C.Park, Common-Mask Guided Image Reconstruction for Enhanced Four-Dimensional Cone-Beam Computed Tomography, issued on August 20, 2019, U.S. Patent No. 10,388,036.

J. Dobson, Y.Chen, M.Davidson, and K.White, Systems and Methods for Detecting the Presence of Anomalous Material within Tissue, Serial No.: 14/342,976, U.S. Patent No. 9,767,552, issued on September 19, 2017.

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. 2007.

Patent filed

J.Dobson, M. Davidson, K.White and Y.Chen, Detection of Anomalies within Tissue, U.S. Provisional App. No.: 62/425,300, November 22, 2016.

B.Lu, Y.Chen, H.Zhang and C.Park, Common-Mask Guided Image Reconstruction for Enhanced Four-Dimensional Cone-Beam Computed Tomography, U.S. Provisional App. No. 62/118,952, October 26, 2015.

J.Dobson, M.Davison, Y.Chen, K.White, Systems and Methods for Detecting the Presence of Iron Within Tissue (the Invention), U.S. Patent, Serial No. 14/342,976, March 5, 2014.

M.Davison, Y.Chen, J.Dobson, K.White, Systems and Methods for Detecting the Presence of Iron Within Tissue, U.S. Patent, PCT/US12/53916, 2012.

Y.Chen and X.Ye, Fast MR Image Reconstruction in Partially Parallel Imaging. U.S. Patent, PCT/US11/58921, 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

Y.Chen, X.Ye and Q.Zhang, Book Chapter: Variational Model Based Deep Neural Networks for Image Reconstruction, *Handbook of Mathematical Models and Algorithms in Computer Vision and Imaging*, Springer Cham. (2021), 1-29.

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.

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

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.

C. Refereed Papers

Submitted and In Press

Y.Chen, H.Liu and W.Wang, Extrapolated Smoothing Descent Algorithm for Constrained Nonconvex and Nonsmooth Composite Problems, *Chinese Annals of MathematicsSeries B.* (2022) (submitted).

W.Bian, Q.Zhang, X.Ye and Y.Chen, A Learnable Variational Model for Joint Multimodal MRI Reconstruction and Synthesis, The 25th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2022), Singapore, September 18-22, (2022) (accepted)

W.Bian, Y.Chen and X.Ye, An Optimal Control Framework for Joint-channel Parallel MRI Reconstruction without Coil Sensitivities, *Magnetic Resonance Imaging*, (to appear).

Published

W.Wang and Y.Chen, An accelerated smoothing gradient method for nonconvex nonsmooth minimization in image processing, *Journal of Scientific Computing*, 90, 31 (2022). Pages 1-28.

Y. Chen, H.Liu, X.Ye, Q.Zhang, Learnable Descent Algorithm for Nonsmooth Nonconvex Image Reconstruction, *SIAM Journal on Imaging Science*, Vol. 14 (4), 15321564, (2021).

W.Bian, Y.Chen, X.Ye, and Q.Zhang, An Optimization-Based Meta-Learning Model for MRI Reconstruction with Diverse Dataset, *Special Issue on Inverse Problems and Imaging of Journal of Imaging,* Vol. 7 (11) (early access version article number 231) 29 pages, (2021).

Q. Zhang, X. Ye, and Y. Chen. Nonsmooth nonconvex LDCT image reconstruction via learned descent algorithm. In *Developments in X-Ray Tomography XIII, International Society for Optics and Photonics,* Vol. 11840, (2021), page 1184013 (9 pages).

W. Zhang, X. Feng, F.Xiao, Y.Chen; A Folded Concave Penalty Regularized Low Rank Subspace Clustering Method to Integrate Affinity and Clustering, *Mathematical Problems in Engineering,* Vol. 2021, Article ID 6641180, 13 pages, (2021). https://doi.org/10.1155/2021/6641180.

W. Bian, Y.Chen and X.Ye, Deep Parallel MRI Reconstruction Network Without Coil Sensitivities. Machine Learning for Medical Image Reconstruction, *Lecture Notes in Computer Science,* Vol 12450. Springer, Cham. (2020). https://doi.org10.1007/978-3-030-61598-7-2.

Y.Chen, X.Ye and W.Zhang, Acceleration techniques for level bundle methods in weakly smooth convex constrained optimization, *Computational Optimization and Applications*, Vol. 77 (2), (2020). https:// doi.org/10.1007/s10589-020-00208-9.

C.Chen, Y.Chen and X.Ye, A Randomized Incremental Primal Dual Method for Decentralized Consensus Optimization, *Special Issue "Mathematics of Data Science" in Analysis and Applications,* Vol. 19 (3), 465-489 (2021)

X.H.Yang, L.Tian, Y.Chen, L.Yang, S.Xu, and W.Wu, Inverse Projection Representation

and Category Contribution Rate for Robust Tumor Recognition, *IEEE/ACM Transactions on Computational Biology and Bioinformatics,* Vol.17 (4). 1262-1275, (2020).

W.Zhang, X.Feng, Y.Chen, A Manifold Laplacian Regularized Semi-supervised Sparse Image Classification Method with a Variant Trace Lasso Norm, *IEEE Access*, Vol. 8 (1), 97361-97369 (2020). doi: 10.1109/ACCESS.2020.2997413.

J. Cui, Z. Qin, S. Chen, Y. Chen and H. Liu, Structure and Tracer Kinetics-Driven Dynamic PET Reconstruction, *IEEE Transactions on Radiation and Plasma Medical Sciences*, Vol. 4 (4), 400-409, (2020), doi: 10.1109/TRPMS.2019.2947860.

S.Dual, S.Yu, Y.Chen and J.C. Principe, On Kernel Method-Based Connectionist Models and Supervised Deep Learning Without Backpropagation, *Neural Computation,* Vol. 32 (1), 97-135, (2020).

Y.Chen, B.Li and X.Ye, A Two-stage Algorithm for Joint Multimodal Image Reconstruction, *SIAM Journal on Imaging Science,* Vol. 12(3), 14251463, (2019).

N.Xie, Y.Chen and H.Liu, 3D Tensor Based Nonlocal Low Rank Approximation in Dynamic PET Reconstruction, *Special Issue "Compressed Sensing in Biomedical Signal and Image Analysis" in Sensors,* 19(23), 5299-5132, (2019).

W.Wu, X.Yang, Y.Chen, J.Zhang, D.Long, L.Yang and C.Tian, Layer-Wise Pre-Training Low-Rank NMF Model for Mammograms-Based Breast Tumor Classification, *Journal of the Operations Research Society of China,* Vol. 7 (4), 515-537, (2019).

Y.Chen, G.Lan, Y.Ouyang, and W.Zhang, Fast Bundle-Level Methods for Unconstrained and Ball Constrained Convex Optimization, *Computational Optimization and Applications,* 73 (1), 159-199, (2019).

L.Fang, Q.Zhung, W.Mao, Y.Chen and H.Lin, TV Regularized Low-rank Framework for Localizing Premature Ventricular Contraction Origin, Special Section on Theory, Algorithms and Applications of Sparse Recovery in *IEEE Access,* Vol.7, 27802-27813, (2019).

L.Fang, J.Xu, H.Hu, Y.Chen, P.Shi, L.Wang, H.Liu, Noninvasive imaging of epicardial and endocardial potentials with low rank and sparsity constraints, *IEEE Transactions on Biomedical Engineering,* Vol. 66 (9), 2651-2662, (2019).

X.H.Yang, W.Wu, Y.Chen, X.Li, J.Zhang, D.Long, L.Yang, An Integrated Inverse Space Sparse Representation Framework for Tumor Classification, *Pattern Recognition*, Vol.93, 293-311, (2019).

J.Cui, H.Yu, S.Chen, Y.Chen and H.Liu, Simultaneous Estimation and Segmentation from Projection Data in Dynamic PET, *Medical Physics,* Vol. 46 (3), 1245-1259, (2019).

H.Liu, Y.Chen and B.Lu, A New Inverse Planning Formalism with Explicit DVH Constraints and Kurtosis-Based Dosimetric Criteria, *Physics in Medicine and Biology*, Vol. 63 (18) 1-13, (2018).

C.Chen, Y.Chen, Y.Ouyang and E.Pasiliao, An Accelerated Stochastic ADMM with Important Sampling, *Journal of Optimization Theory and Application,* Vol. 179 (2), 675-695, (2018).

N.Xie, Y.Chen and H.Liu, Nonlocal Low-Rank and Total Variation Constrained PET Image Reconstruction, *Proceeding of IEEE conference: the 24th International Conference on Pattern Recognition,* August 20-24, 2018, Beijing, China, 3874-3879 (2018).

Y.Chen and W.Zhang, Inexact Accelerated Bundle Level methods, *Science China: Mathematics,* Vol. 47 (10) (2017) 1119-1142.

Y.Chen, X.Li, Y.Ouang and E.Pasiliao, Accelerated Bregman Operator Splitting with backtracking, *Inverse problem and Imaging,* Vol. 11 (6), (2017), 1047 1070.

H.Zhang, X.Li, Y.Chen, J.Park, A.P.Li and X.G. Zhang, Postprocessing Algorithm for Driving Conventional Scanning Tunneling Microscope at Fast Scan Rates, *Scanning,* Vol. 2017, Article ID 1097142, 1-8, (2017). doi:10.1155/2017/1097142

Y.Chen, G.Lan and Y.Ouyang, Accelerated Schemes for a Class of Variational Inequalities, a special issue of Stochastic Equilibrium and Variational Inequalities, *Mathematical Programming B)*, (2017), DOI 10.1007/s10107-017-1161-4, 1-37.

H.Yu, S.Chen, Y.Chen and H.Liu, Joint Reconstruction of Dynamic PET Activity and Kinetic Parametric Images Using Total Variation Constrained Dictionary Sparse Coding, *Inverse problem and Imaging*, Vol. 33(5), 055011 (2017), 1-18.

H.Zhang, X.Li, Y.Chen, C.Durand, A.P.Li and X.G. Zhang, Conductivity map from scanning tunneling potentiometry, *Review of Scientific Instruments*, DOI: http://dx.doi.org/10.1063/1.4960081.

F.Dong and Y.Chen, A Fractional-order Derivative Based Variational Framework for Image Denoising, *Inverse Problem and Imaging*, Vol. 10 (1) (2016), 27-50.

X.Yu, H.Liu, S.Chen, M.Liu, Y.Chen, P.Shi. Sparse/Low Rank Constrained Reconstruction for Dynamic PET Imaging, *PLOS ONE*, November 5, 2015, DOI: 10.1371/journal.pone.0142019.

S.Chen, H.Liu, Z.Hu, P.Shi and Y.Chen. Simultaneous Reconstruction and Segmentation of Dynamic PET via Low-rank and Sparse matrix decomposition, *IEEE Transactions on Biomedical Engineering*, Vol. 62(7) (2015), 1784-1795.

F.Dong, Y.Chen and D.Kong, Salt and Pepper Noise Removal Based on an Approximation of l_0 Norm, *Computers and Mathematics with Applications*, Vol. 70(5), (2015), 789-804.

J.Park, H.Zhang, Y.Chen, Q.Fan, J.Li, C.Liu and B.Lu, Common-mask guided image reconstruction (c-MGIR) for enhanced four-dimensional cone-beam computed tomography, *Physics in Medicine and Biology*, Vol. 60(21) (2015), 8505-8524.

M.Guo, L.Chen, X.Shen, H.Iwai, Y.Chen, H.Liu, System model enabling fast tomographic phase microscopy with total variation regularization, *Physics in Medicine and Biology*, Vol. 60(23) (2015), 9059-9077.

J.Park, H.Zhang, Y.Chen, Q.Fan, L.Kahler, C.Liu and B.Lu, Priori mask guided image reconstruction (p-MGIR) for ultra-low dose cone-beam computed tomography, *Physics in Medicine and Biology*, Vol. 60, no. 21 (2015), 8505 8524.

Y.Ouyang, Y.Chen, G.Lan and E.Pasiliao Jr., An Accelerated Linearized Alternating Direction Method of Multipliers, *SIAM Journal on Imaging Sciences*, 8 (1) (2015), 644-681.

Y.Chen, J.Shi, M.Rao, and J-S.Lee, Deformable Multi-modal Image Registration by Maximizing Renyi's Statistical Dependence Measure, *Inverse Problem and Imaging*, Vol.9 (1), (2015) 79-203.

H.Zhang, Y.Chen, E.Pasoliao and F.Huang, Joint Multi-Shot Multi-Channel Image Reconstruction in Compressive Diffusion Weighted MR Imaging, *Proc. SPIE 9413, Medical Imaging 2015: Image Processing*, 94130B (March 20, 2015); doi:10.1117/12.2082104.

M. Liu, Y.Chen, H.Zhang and F.Huang, Multi-Contrast Multi-Channel MR Image Reconstruction with Significantly Reduced Data, *Proc. SPIE 9413, Medical Imaging 2015: Image Processing*, 94130C (March 20, 2015); doi:10.1117/12.2082136.

H.Zhang, J.Park, Y.Chen, G.Lan and B.Lou, A novel method for 4D Cone-Beam Computer-Tomography Reconstruction, *Proc. SPIE 9413, Medical Imaging 2015*: Image Processing, 941324 (March 20, 2015); doi:10.1117/12.2082128.

S.Chen, H.Liu, P.Shi and Y.Chen, Sparse Representation and Dictionary Learning Penalized Image Reconstruction for Positron Emission Tomography, *Physics in Medcine Biology* 60 (2015) 807-823.

I.Posirca, Y.Chen, C.Z. Barcelos, A New Variational Model for Segmentation and Denoising of Images with Multiplicative Noise, *Advanced Modeling and Optimization*, Vol.17 (1), (2015) 1-18.

Y.Chen, G.Lan and Y.Ouyang, Optimal Primal-Dual Methods for a Class of Saddle Point Problems, *SIAM Journal on Optimization* 24(4)(2014), 1779-1814.

C. A. Z. Barcelos, Y.Chen, F.Chen, Soft Image Segmentation Based on the Mixture of Gaussian and the Phase-Transition Theory, *Applied Mathematics*, Vol.5, (2014), 2888-2898.

S.Chen, Z.Hu, Y.Chen, H.Liu, Simultaneous Reconstruction and Segmentation for Dynamic PET: A Low Rank Framework, *Proceedings of the 2014 IEEE International Symposium on Biomedical Imaging*, Beijing, China, April 29 - May 2, (2014) 967-970.

J.Peng, F.Dong, Y.Chen, and D.Kong, A Region Appearance Based Adaptive Variational Model for 3D Liver Segmentation, *Medical Physics*, Vol. 41 (4), 043502 (2014) 1-11.

Y.Ouyang, Y.Chen and Y.Wu, Vectorial Total Variation Regularization of Orientation Distribution Functions in Diffusion Weighted MRI, *International Journal of Bioinformatics Research and Applications* , Vol. 10, No.1, (2014), 110-127.

J.Huang, X.Yang, Y.Chen and L.Tang, Ultrasound kidney segmentation with a global prior shape, *Journal of Visual Communication and Image Representation*, Vol. 24, Issue 7, (2013), 937943.

M.Liu, Y.Chen, Y.Ouyang, X.Ye, and F.Huang, An Enhanced Approach for Simultaneous Image Reconstruction and Sensitivity Map Estimation on Partially Parallel Imaging, *Proceedings of the 20th IEEE International Conference on Image Processing*, (2013), 2314-2318.

H.Zhang, X.Ye and Y.Chen, An Efficient Algorithm for Multi-phase Image Segmentation with Intensity Bias Correction, *IEEE Transaction on Image Processing*, (doi: 10.1109/TIP.2013.2262291), 22(10), (2013), 3842-3851.

F.Chen, Y.Chen and H.Wang, A New Multiphase Soft Segmentation with Adaptive Variants, *Applied Computational Intelligence and Soft Computing*, Vol. 2013, Article ID 921721, 9 pages, doi:10.1155/2013/921721, (2013).

Y.Ouyang, Y.Chen, and Y.Wu, Total Variation and Wavelet Regularization of Orientation Distribution Functions in Diffusion MRI, *Inverse Problems and Imaging*, Vol. 7, (2), (2013), 565-583.

M.Liu, Y.Chen, Y.Ouyang, X.Ye, F.Huang, An Enhanced Approach for Simultaneous Image Reconstruction and Sensitivity Map Estimation on Partially Parallel Imaging, *Proceedings of 20th IEEE International Conference on Image Processing*, (2013), 2314-2318.

Y.Chen, W.Hager, M.Yashtini and X.Ye, Bregman Operator Splitting with Variable Stepsize for Total Variation Image Reconstruction, *Computational Optimization and Applications*, Vol. 54, (2), (2013), 317-342.

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*, Vol.5 (1), (2012), 90-118.

H.Liu, P.Shi and Y.Chen, Integrative Approaches in Computational Biomedical Imaging, *Computational and Mathematical Methods in Medicine*, Vol. 2012, Article ID 162892, (2012), doi:10.1155/2012/162892.

H.Zhang, Y.Chen, and J.Shi, Nonparametric Image Segmentation Using Renyis Statistical Dependence Measure, *Journal of Mathematical Imaging and Vision*, (doi:10.1007/s10851-012-0329-z). Vol. 44(3), (2012), 330 - 340.

Y.Chen and X.Ye, Modeling and Computations in Image Registration, *Mathematical Modeling and Its Applications*, Vol. 1, No. 1, (2012), 26-37.

S.Wu, G.Fu, Y.Chen, Z.Wang and R.Wu, Genetic Mapping of Complex Traits by Minimizing Integrated Square Errors, *BMC Genetics*, (2012), 13:20 doi:10.1186/1471-2156-13-20.

H.Zhang and Y.Chen, A Sparseland model for Deblurring Images in the Presence of Impulse, *Proceedings of 2012 IEEE International Conference on Image Processing*, Sep.30-Oct.3, 2012, Orlando, Florida, (2012), 3077-3080.

H.Zhang, X.Ye and Y.Chen, A Variational Multiphase Model for Simultaneous MR Image Segmentation and Bias Correction, *Proceedings of 2012 IEEE International Conference on Image Processing*, Sep.30-Oct.3, 2012, Orlando, Florida, (2012), 2037-2040.

M. Yashtini, W. W. Hager, Y. Chen, X. Ye, Parallel MR Image Reconstruction Using Sensitivity Encoding, *Proceedings of 2012 IEEE International Conference on Image Processing*, Sep.30-Oct.3, 2012, Orlando, Florida, (2012), 2077-2080.

F.Chen, Y.Chen and H.D.Tagare, A New Framework of Multi-phase 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.

J.An and Y.Chen, A Piecewise Constant Region Based Simultaneous Image Segmentation and Registration, International Conference on Signal Processing and Imaging Engineering, San Francisco, California, October, 2011, *World Congress on Engineering and Computer Science*, Vol. I,(2011) 491-494.

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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, (2011) 272-275.

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