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RESEARCH INTERESTS

Computer Graphics and Visualization
-(Geometric processing and analysis, geometric modeling, physically-based modeling, scientific visualization)

Image Analysis and Informatics
-(Geometric techniques for image analysis, learning and mining algorithms for imaging informatics, biomedical imaging applications, computational biomedicine)

Computer Vision
-(Shape reconstruction, feature extraction, shape analysis, tracking and motion analysis, networked 3D vision)

EDUCATION

Ph.D. in Computer Science, 2004
State University of New York at Stony Brook

M.S. in Computer Science, 2002
State University of New York at Stony Brook

M.S. in Pattern Recognition and Artificial Intelligence, 1999
Institute of Automation, Chinese Academy of Sciences (CAS)

B.S. in Electrical Engineering, 1996
Huazhong University of Science and Technology (HUST)

PROFESSIONAL EXPERIENCE

Founding Director of the Graphics, Imaging and Visualization Lab **8/2004 – present**
Wayne State University (WSU), Department of Computer Science, Detroit, Michigan, USA

Professor (with Tenure) **8/2014 – present**
Wayne State University (WSU), Department of Computer Science, Detroit, Michigan, USA

Associate Professor (with Tenure) **8/2009 – 7/2014**
Wayne State University (WSU), Department of Computer Science, Detroit, Michigan, USA

Assistant Professor **8/2004 – 7/2009**
Wayne State University (WSU), Department of Computer Science, Detroit, Michigan, USA

Summer Internship Research **6/2000 - 8/2000**
Symbol Technology, Inc., R&D Lab, Holtsville, New York, USA

AWARDS AND HONORS

- **Best Demo Award at GENI Engineering Conference 23 in 2015**
- **Best Demo Award at GENI Engineering Conference 21 in 2014**
- **First Runner-up Demo Award at GENI Engineering Conference 20 in 2014.**
- **K. C. Wong Research Award in 2010**
- **The Gaheon Award for the Best Paper of Year 2009 in IJCAD/CAM** (with $10,000 cash prize).
- **Excellence in Teaching Award**, College of Liberal Arts and Sciences, WSU, 2008
- **WSU Faculty Research Award**, 2005
- **Best Paper Award** from ACM Symposium on Solid Modeling and Applications, 2004 (with $3,000 cash prize)

RESEARCH GRANTS

External grants

1. **NSF**, Predictable Wireless Networked Collaborative 3D Reconstruction for Real-Time Augmented Vision, 9/1/2016-8/31/2019, $600,000 (Co-PI, PI: Hongwei Zhang).

2. **NSF-GENI**, GENI-Enabled Vehicular Sensing and Control Networking: from Experiments to Applications, 10/01/2013-12/31/2015, $303,339 (Co-PI, PI: Hongwei Zhang).

3. **NSF of China -** Joint Research Fund for Overseas Scholars, Digital Reconstruction and Archiving of Large-Scale Unstructured Scanning Data, 1/1/2013-12/31/2014, RMB200,000 (PI).

4. **NSF**, Collaborative Research: Coordinated Visualization for Comparative Analysis of Cross-subject, Multi-measure and Multi-dimensional Imaging Data, 8/01/2009-7/31/2014, total budget $500,000 (Lead PI).

5. **NSF**, EAGER: Geometric Mapping and Diffusion for 3D Imaging Informatics, 9/01/2009-8/31/2012, $90,727 (Sole PI).

6. **NIH**, Electrical, Molecular and Clinical Correlates of Human Interictal Spiking, 6/1/2008-5/31/2014. $1,611,594. (Co-PI, PI: Jeffrey Loeb, 1R01NS058802-01A2).

7. **NIH**, Longitudinal Neuroimaging in Sturge-Weber Syndrome, 7/1/2008-4/30/2014. $1,485,165. (Co-I, PI: Csaba Juhasz, 2R01NS041922-05A1).

8. **NSF**, CRI: Acquisition of Research Infrastructure for Knowledge-enhanced, Large-scale Learning of Multimodality Visual Data, 5/1/2008-4/30/2011, $295,022 (Co-PI, PI: Ming Dong).

9. **Ford Motor Company**, An Immersive, Interactive Visualization Environment for Large-scale Data and Visual Analytics, 1/1/2008-12/31/2009, $180,000.

10. **NSF**, Collaborative Research: Integrated Modeling and Learning of Multimodality Data across Subjects for Brain Disorder Study, 9/01/2007-8/31/2011, total budget $455,300 (Lead PI).

11. **State of Michigan -** 21st Century Jobs Funds, HyperEye: Susceptibility Weighted Imaging-based Informatics Tools for Brain Tumor Studies, 1/01/2007-12/31/2010, $1,174,404 (including WSU match) (Co-PI, PI: Ming Dong).

12. **Michigan Technology Tri-Corridor**, Software Tool for Neuroimaging in Epilepsy, 9/1/2005-8/31/2008, $475,881 (including WSU match) (Co-PI, PI: Otto Muzik).

13. **Michigan Technology Tri-Corridor**, Virtual Histology with Volumetric Computerized Tomography, 10/01/2005-9/30/2008, $401,809 (including WSU match) (PI).

Internal grants

1. **Children's Hospital of Michigan**, Quantification of Molecular Imaging Data with Integrative PET and MRI Analysis, 5/1/2015~4/30/2017, $120,775 (PI).

2. **WSU Research Enhancement Foundation**, EpilepsyView: A Software Tool to Identify and Visualize Electrical and Clinical Correlates of Human Interictal Spiking from Electronic Medical Records, 5/31/2013~11/30/2014, $105,897. (Co-PI, PI: Ming Dong)

3. **WSU-GRA Competition Award**, Terascale Brain Imaging Data Analytics, 9/1/2011-8/31/2012, $33,000 (PI).

4. **WSU-GRA Competition Award**, Relational Scientific & Information Visualization for Medical Imaging Analytics, 9/1/2010-8/31/2011, $33,000 (PI).

5. **WSU-GRA Competition Award**, Multiscale Geometry-guided Data and Visual Analytics for Large-scale Medical Imaging Database, $33,000, 9/1/2009-8/31/2010 (PI).

6. **WSU-GRA Competition Award**, Visual Neuro-Analytics: A Computational Thinking Framework for Neuroimaging and Neuroscience Applications, 9/1/2008-8/31/2009, $33,000 (PI).

7. **WSU Research Enhancement Foundation**, A Computational Model of Human Epilepsy, 5/31/2007-4/30/2009, $292,609 (Co-PI, PI: Jeff Loeb).

8. **WSU-GRA Competition Award**, A Computational Modeling and Statistical Learning Framework for Brain Disorder Study, 9/1/2007-8/31/2008, $33,000 (PI).

9. **WSU-GRA Competition Award**, A Novel Computational Framework for Quantitative Analysis of Fiber Tract Connections in the Living Human Brain, 9/1/2005-8/31/2006, $33,000 (PI).

10. **WSU Faculty Research Award**, Multivariate Simplex Splines for Advanced Shape Design, 5/1/2005-4/30/2006, $10,000 (PI).

PUBLICATIONS

Peer-Reviewed Journal Papers

1. Hai Jin, Xun Wang, Zichun Zhong and Jing Hua, "Robust 3D Face Modeling and Reconstruction from Frontal and Side Images," *Computer-Aided Geometric Design*, Vol. 50, pp. 1–13, 2017.

2. Xun Wang, Guoli Yan, Huiyan Wang, Jianhai Fu, Jing Hua, Jingqi Wang, Guofeng Zhang, and Hujun Bao, "Semantic Annotation for Complex Video Street Views based on 2D-3D Multi-feature Fusion and Aggregated Boosting Decision Forests," *Pattern Recognition*, Vol. 62, pp. 189–201, 2017.
3. Jiaxi Hu, Hajar Hamidian, Zichun Zhong and Jing Hua, "Visualizing Shape Deformations with Variation of Geometric Spectrum," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 23, No. 1, pp. 721 - 730, 2017.
4. Zichun Zhong and Jing Hua, "Kernel-Based Adaptive Sampling for Image Reconstruction and Meshing," *Computer-Aided Geometric Design*, 2016.
5. Hongwei Zhang, Le Yi Wang, George Yin, Shengbo Eben Li, Keqiang Li, Jing Hua, Yeuhua Wang, Chuan Li, Hai Jin, "Trustworthy Foundation for CAVs in an Uncertain World: From Wireless Networking, Sensing, and Control to Software-Defined Infrastructure," *Road Vehicle Automation*, Springer, 2016.
6. Xuejiao Chen, Jiaxi Hu, Huiguang He, and Jing Hua, "Spherical Volume-Preserving Demons Registration," *Computer-Aided Design*, Vol. 58, pp. 99-104, 2015.
7. Sandeep Mittal, Daniel Barkmeier, Jing Hua, Darshan Pai, Darren Fuerst, Maysaa Basha, Jeffrey A Loeb, Aashit Shah, "Intracranial EEG analysis in tumor-related epilepsy: Evidence of distant epileptic abnormalities," *Clinical Neurophysiology*, 2015.
8. Jiaxi Hu, Guangyu Zou, and Jing Hua, "Volume-Preserving Mapping and Registration for Collective Data Visualization," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 20, No. 6, pp. 2664-2673, 2014.
9. Vahid Taimouri and Jing Hua, "Deformation Similarity Measurement in Quasi-Conformal Shape Space," *Graphics Models*, Vol. 76, No. 2, pp. 57-69, 2014
10. Jieqiong Wang, Wenjing Li, Wen Miao, Dai Dai, Jing Hua, and Huiguang He, "Age estimation using cortical surface pattern combining thickness with curvatures," *Medical & Biological Engineering & Computing*, Vol. 52, No. 4, pp. 331-341, 2014.
11. Vahid Taimouri and Jing Hua, "Visualization of Shape Motions in Shape Space," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 17, No. 12, pp. 2644-2652, 2013.
12. Xuejiao Chen, Huiguang He, Guangyu Zou, Xiaopeng Zhang, Xianfeng Gu, and Jing Hua, "Ricci Flow-based Spherical Parameterization and Surface Registration," *Computer Vision and Image Understanding*, Vol. 117, No. 9, pp. 1107–1118, 2013.
13. Jiaxi Hu and Jing Hua, "Pose Analysis Using Spectral Geometry," *The Visual Computer*, Vol. 29, No. 9, pp. 949-958, 2013.
14. Otto Muzik, Darshan Pai, Csaba Juhasza and Jing Hua, The Need for Clinical Quantification of Combined PET/MRI Data in Pediatric Epilepsy, *Nuclear Instruments and Methods in Physics Research* Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Vol. 702, pp. 42–46, 2013.
15. Daniel Barkmeier; Danielle Senador, Karine Leclercq, Darshan Pai, Jing Hua, Nash Boutros, Rafal Kaminski, Jeffrey Loeb, "Electrical, Molecular and Behavioral Effects of Interictal Spiking," *Neurobiology of Disease*, Vol. 47, No. 1, pp. 92-101 2012.
16. Dai Dai, Jieqiong Wang, Jing Hua, and Huiguang He, "Classification of ADHD Children through Multimodal Magnetic Resonance Imaging," *Frontiers in Systems Neuroscience*, 2012, 6:63. doi: 10.3389/fnsys.2012.00063. (Special Issue for the ADHD-200 Global Competition; Ranked the 6th place in the global competition).

17. Guangyu Zou, Jiaxi Hu, Xianfeng Gu, and Jing Hua, "Authalic Parameterization of General Surfaces Using Lie Advection," *IEEE Transactions on Visualization and Computer Graphics* (VIS), Vol. 17, No. 6, 2011.
18. Vahid Taimouri, Xin Liu, Zhaoqiang Lai, Chang Liu, Darshan Pai, and Jing Hua, "Colon Segmentation for Prepless Virtual Colonoscopy," *IEEE Transactions on Information Technology in Biomedicine*, Vol. 15, No. 5, pp. 709 - 715, 2011.
19. Darshan Pai, Hamid Soltanian-Zadeh, and Jing Hua, "Evaluation of Fiber Bundles across Subjects through Brain Mapping and Registration of Diffusion Tensor Data," *NeuroImage*, Vol. 54, pp. S165-S175, 2011.
20. Yunhao Tan, Jing Hua, and Hong Qin, "Physically Based Modeling and Simulation with Dynamic Spherical Volumetric Simplex Splines," *Computer-Aided Design*, Vol. 42, No. 2, pp. 95 - 108, 2010.
21. Cui Lin, Darshan Pai, Shiyong Lu, Otto Muzik, and Jing Hua, "Coclustering for Cross-subject Fiber Tract Analysis through Diffusion Tensor Imaging," *IEEE Transactions on Information Technology in Biomedicine*, Vol. 14, No. 2, pp. 514 - 525, 2010.
22. Wei Zeng, Jing Hua, and Xianfeng Gu, "Symmetric Conformal Mapping for Surface Matching and Registration," *International Journal of CAD/CAM*, 2009 (*Won the Gaheon Award in 2010, the Best Paper of IJCC 2009*).
23. Guangyu Zou, Jing Hua, Zhaoqiang Lai, Xianfeng Gu, and Ming Dong, "Intrinsic Geometric Scale Space by Shape Diffusion," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 15, No. 6, 2009.
24. Yanhua Chen, Lijun Wang, Ming Dong, and Jing Hua, "Exemplar-based Visualization of Large Document Corpus," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 15, No. 6, 2009.
25. Yuanhong Li, Ming Dong, and Jing Hua, "Simultaneous Localized Feature Selection and Model Detection for Gaussian Mixtures," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2009.
26. Cui Lin, Shiyong Lu, Xubo Fei, Artem Chebotko, Darshan Pai, Zhaoqiang Lai, Farshad Fotouhi, and Jing Hua, "A Service-Oriented Architecture for Visualization- and Interaction-intensive sciEntific Workflow (VIEW)," *IEEE Transactions on Service Computing*, Vol. 2, No. 1, pp. 79-92, 2009.
27. Jiaxi Hu and Jing Hua, "Salient Spectral Geometric Features for Shape Matching and Retrieval," *The Visual Computer*, Vol. 25, No. 5-7, pp 667-675, 2009.
28. Michael E. Behen, Otto Muzik, Anita S.D. Saporta, Benjamin J Wilson, Darshan Pai, Jing Hua and Harry T. Chugani, "Abnormal fronto-striatal connectivity in children with histories of early deprivation: A diffusion tensor imaging study," *Brain Imaging and Behavior*, Vol. 3, 2009.
29. Jing Hua, Zhaoqiang Lai, Ming Dong, Xianfeng Gu, and Hong Qin, "Geodesic Distance-Weighted Shape Vector Image Diffusion," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 14, No. 6, pp. 1643-1650, 2008.
30. Guangyu Zou, Jing Hua, Ming Dong, and Hong Qin, "Surface Matching with Salient Keypoints in Geodesic Scale Space," *Journal of Computer Animation and Virtual Worlds*, Vol. 19, No. 4, pp. 399-410, 2008.
31. Yanhua Chen, Manjeet Rege, Ming Dong, and Jing Hua, "Nonnegative Matrix Factorization for Semi-supervised Data Clustering," *Knowledge and Information Systems*, 2008.

32. Cui Lin, Shiyong Lu, Xuwei Liang, Jing Hua, and Otto Muzik, "Cocluster Analysis of Thalamo-Cortical Fiber Tracts Extracted from Diffusion Tensor MRI," *International Journal of Data Mining and Bioinformatics*, 2008.
33. Yuanhong Li, Ming Dong, and Jing Hua, "Localized Feature Selection for Clustering," *Pattern Recognition Letters*, Vol. 29, No. 1, pp. 10 - 18, 2008.
34. Yunhao Tan, Jing Hua, and Ming Dong, "3D Reconstruction from 2D Images with Hierarchical Continuous Simplices," *The Visual Computer*, Vol. 23, No. 9-11, 905-914, 2007.
35. Yuanhong Li, Ming Dong, and Jing Hua, "A Gaussian Mixture Model to Detect Clusters Embedded in Feature Subspace," *Communications in Information and Systems*, Vol. 7, No. 4, 337-352, 2007.
36. Otto Muzik, Diane Chugani, Guangyu Zou, Jing Hua, Yi Lu, Shiyong Lu, Ashi Asano, and Harry Chugani, "Multimodality Data Integration in Epilepsy," *International Journal of Biomedical Imaging*, Vol. 2007, pp. 1-12, 2007.
37. Greg Heckenberg, Yongjian Xi, Ye Duan, and Jing Hua. "Brain Structure Segmentation from MRI by Geometric Surface Flow," *International Journal of Biomedical Imaging*, Vol. 2006, pp. 1-6, 2006.
38. Weiping Ren, Bin Wu, Xin Peng, Jing Hua, Hsiao-Nan Hao, and Paul Wooley. "Implant Wear Induces Inflammation, But Not Osteoclastic Bone Resorption, In RANK -/- Mice," *Journal of Orthopaedic Research*, pp. 1575-1586, 2006.
39. Jing Hua, Ying He, and Hong Qin, "Trivariate Simplex Splines for Inhomogeneous Solid Modeling in Engineering Design," *ASME Transactions: Journal of Computing and Information Science in Engineering*, Vol. 5, No. 2, pp. 149-157, 2005.
40. Ye Duan, Jing Hua, and Hong Qin, "Interactive Shape Modeling Using Lagrangian Surface Flow," *The Visual Computer*, Vol. 21, No. 5, pp. 279-288, 2005.
41. Jing Hua and Hong Qin, "Haptics-based Dynamic Implicit Solid Modeling," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 10, No. 5, pp. 574 – 586, 2004.
42. Jing Hua and Hong Qin, "Scalar-Field-Guided Adaptive Shape Deformation and Animation," *The Visual Computer*, Vol. 20, No. 1, pp. 47 – 66, 2004.
43. Xiaohu Guo, Jing Hua, and Hong Qin, "Scalar-Function-Driven Local and Global Editing on Point Set Surfaces," *IEEE Computer Graphics and Applications*, Vol. 24, No. 4, pp. 43 – 52, 2004.
44. Xiaohu Guo, Jing Hua, and Hong Qin, "Touch-based Haptics for Interactive Editing on Point Set Surfaces," *IEEE Computer Graphics and Applications*, Vol. 24, No. 6, pp. 31 – 39, 2004.
45. Ye Duan, Jing Hua, and Hong Qin, "*HapticFlow*: PDE-Based Mesh Editing with Haptics," *Journal of Computer Animation and Virtual Worlds*, Vol. 15, No. 3&4, pp. 193 – 200, 2004.

Peer-Reviewed Conference Papers

1. Jiaxi Hu, Nasim Hajar, Zichun Zhong and Jing Hua, "Visualizing Shape Deformations with Variation of Geometric Spectrum," In *IEEE Visualization Conference*, 2016. (The paper appeared in IEEE TVCG).
2. Hai Jin, Xun Wang, Zichun Zhong and Jing Hua, "Robust 3D Face Modeling and Reconstruction from Frontal and Side Images," In *International Conference on Geometric Processing*, 2016.

3. Hajar Hamidian, Jiaxi Hu, Farshad Fotouhi, Hamid Soltanian-Zadeh, and Jing Hua. "Shape Deformations," In *the 1st inter-institutional WSU-HFHS Symposium on "Imaging in Motion and Beyond"*, January 2016.
4. Hongwei Zhang, Le Yi Wang, George Yin, Jing Hua, Yuehua Wang, "Trustworthy Foundation for CAVs in an Uncertain World: From Wireless Networking, Sensing, and Control to Software-Defined Innovation Platforms," In *AUVSI/TRB Automated Vehicles Symposium (AVS)*, 2015.
5. Jiaxi Hu, Guangyu Zou, and Jing Hua, "Volume-Preserving Mapping and Registration for Collective Data Visualization," In *IEEE Visualization Conference*, 2014. (The paper appeared in IEEE TVCG)
6. Xuejiao Chen, Jiaxi Hu, Huiguang He, and Jing Hua, "Spherical Volume-Preserving Demons Registration," In *ACM Symposium on Solid and Physical Modeling*, 2014.
7. Zhou Liu, Heng Yang, Ming Dong, Jing Hua: A Bayesian Framework for Accurate Eye Center Localization. In *Proceedings of International Symposium on Visual Computing*, ISVC (2), pp. 250-258, 2014.
8. Vahid Taimouri and Jing Hua, "Visualization of Shape Motions in Shape Space," In *IEEE Visualization/Information Visualization Conference,* 2013 (The paper appeared in IEEE TVCG).
9. Jiaxi Hu and Jing Hua, "Pose Analysis Using Spectral Geometry," In *the 30th International Conference on Computer Graphics* (CGI), 2013 (The paper appeared in The Visual Computer).
10. Vahid Taimouri and Jing Hua, "Left Ventricle Motion Classification in the Medial Surface Shape Space," In *Proceedings of International Symposium on Biomedical Imaging* (ISBI), pp. 1114-1117, 2013.
11. Xuejiao Chen, Wenjing Li, Jing Hua, Xiaopeng Zhang, and Huiguang He, "Shape Manifold Regression with Spherical Harmonics for Hippocampus Shape Analysis," In *Proceedings of SPIE: Medical Imaging*, 2013, doi:10.1117/12.2007158.
12. Vaclav Rijlich and Jing Hua, "What Practices are Suitable for an Academic Software Project?" In *Proceedings of the 29th International Conference on Software Maintainance*, pp. 440 – 443, 2013.
13. Wenrong Zeng, Xue-Wen Chen, Hong Cheng and Jing Hua, "Multi-Space Learning for Image Classification Using AdaBoost and Markov Random Fields," In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases: Solving Complex Machine Learning problems with Ensemble Methods*, 2013.
14. Chang Liu, Zhaoqiang Lai, Ming Dong and Jing Hua, "Multi-instance Rendering Based on Dynamic Differential Surface Propagation," In Proceedings of *the International Conference on Image Processing*, pp. 3005 – 3008, 2012.
15. Jieqiong Wang, Dai Dai, Meng Li, Huiguang He and Jing Hua, "Human Age Estimation with Surface-based Features from MRI Images," In *Proceedings of the MICCAI Machine Learning in Medical Imaging,* pp. 111-118, 2012.
16. Otto Muzik, Darshan Pai, Eishi Asano, Csaba Juhasz, Jing Hua, "Performance evaluation of an integrative software environment for analysis of multi-modality neuroimaging data in pediatric epilepsy," In *Proceedings of Human Brain Mapping Conference*, 2012.
17. Guangyu Zou, Jiaxi Hu, Xianfeng Gu, and Jing Hua, "Authalic Parameterization of General Surfaces Using Lie Advection," In *IEEE Visualization Conference*, 2011 (The paper appeared in IEEE TVCG).

18. Guangyu Zou, Jiaxi Hu, Xianfeng Gu, and Jing Hua, "Area-preserving Surface Flattening Using Lie Advection," In *Proceedings of the 14th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), pp 335-342, 2011.

19. Zhaoqiang Lai, Jiaxi Hu, Chang Liu, Vahid Taimouri, Darshan Pai, Jiong Zhu, Jianrong Xu, and Jing Hua, "Intra-patient Supine-Prone Colon Registration in CT Colonography Using Shape Spectrum," In *Proceedings of the 13th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), pp. 332-339. 2010 (*Oral; Acceptance Rate: 5%*)

20. Vahid Taimouri, Huiguang He, and Jing Hua, "Comparative Analysis of Quasi-Conformal Deformations in Shape Space," In *Proceedings of the 13th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), pp. 489-496, 2010.

21. Wei Zeng, Lok Ming Lui, Lin Shi, Defeng Wang, Winnie C.W. Chu, Jack C.Y. Cheng, Jing Hua, Shing-Tung Yau, and Xianfeng Gu, "Shape Analysis of Vestibular Systems in Adolescent Idiopathic Scoliosis Using Geodesic Spectra," In *Proceedings of the 13th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), pp. 538-546, 2010.

22. Siming Wei, Jing Hua, Jiajun Bu, Chun Chen, and Yizhou Yu, "Bayesian Regularization of Diffusion Tensor Images Using Hierarchical MCMC and Loopy Belief Propagation," In *Proceedings of International Conference on Image Processing*, pp. 65 – 68, 2010.

23. Tian Xia, Yizhou Yu, and Jing Hua, "Automatic Detection of Malignant Prostatic Gland Units in Cross-Sectional Microscopic Images," In *Proceedings of International Conference on Image Processing*, pp. 1057-1060, 2010.

24. Chang Liu, Zhanoqiang Lai, Jiaxi Hu, and Jing Hua, "Detail Preserving 3D Motion Compression Based on Local Transformation," In *Proceedings of the 4th Pacific Rim Symposium on Image and Video Technology*, pp. 507-514, 2010.

25. Guangyu Zou, Jing Hua, Zhaoqiang Lai, Xianfeng Gu, and Ming Dong, "Intrinsic Geometric Scale Space by Shape Diffusion," In *IEEE Visualization Conference*, 2009 (The paper appeared in IEEE TVCG).

26. Yanhua Chen, Lijun Wang, Ming Dong, and Jing Hua, "Exemplar-based Visualization of Large Document Corpus," In *IEEE InfoVis Conference*, 2009 (The paper appeared in IEEE TVCG).

27. Cui Lin, Shiyong Lu, Xubo Fei, Darshan Pai, and Jing Hua, "A Task Abstraction and Mapping Approach to the Shimming Problem in Scientific Workflows," In *Proceedings of the 6th IEEE International Conference on Services Computing* (SCC), pp. 284-291, 2009.

28. Jiaxi Hu and Jing Hua, "Salient Spectral Geometric Features for Shape Matching and Retrieval," In *the 27th Computer Graphics International Conference*, 2009 (The paper appeared in The Visual Computer).

29. Yunhao Tan, Jing Hua, and Hong Qin, "Dynamic Spherical Volumetric Simplex Splines with Applications in Biomedical Simulation," In *Proceedings of ACM Symposium on Solid and Physical Modeling* (SPM), pp 103 – 114, 2008.

30. Zhaoqiang Lai and Jing Hua, "3D Surface Matching and Registration through Shape Images," In *Proceedings of the 11th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), Part II, pp. 44 – 51, 2008.

31. Guangyu Zou, Jing Hua, Ming Dong, and Hong Qin, "Surface Matching with Salient Keypoints in Geodesic Scale Space," In *the 21st International Conference on Computer Animation and Social Agents*, 2008 (The paper appeared in Journal of Computer Animation and Virtual Worlds).

32. Jing Hua, Zhaoqiang Lai, Ming Dong, Xianfeng Gu, and Hong Qin, "Geodesic Distance-Weighted Shape Vector Image Diffusion," In *IEEE Visualization Conference*, 2008 (The paper appeared in IEEE TVCG).

33. Chang Liu, Jiaxi Hu, Jing Hua, and Hong Qin, "Hierarchical Surface Abstraction Using Adaptive Mean Shift," In *Proceedings of the 21st International Conference on Computer Animation and Social Agents*, pp. 1-8, 2008.

34. Manjeet Rege, Ming Dong, and Jing Hua, "Graph Theoretical Framework for Simultaneously Integrating Visual and Textural Features for Efficient Web Image Clustering," In *Proceedings of the 17th International World Wide Web Conference* (WWW), pp. 317-326, 2008.

35. Cui Lin, Shiyong Lu, Zhaoqiang Lai, Artem Chebotko, Xubo Fei, Jing Hua and Farshad Fotouhi, "Service-Oriented Architecture for VIEW: a Visual Scientific Workflow Management System," In *Proceedings of the 5th IEEE International Conference on Services Computing* (SCC), pp. 335-342, 2008.

36. Darshan Pai, Otto Muzik, and Jing Hua, "Quantitative Analysis of Diffusion Tensor Images across Subjects Using Probabilistic Tractography," In *Proceedings of IEEE International Conference on Image Processing* (ICIP), pp. 1448-1451, 2008.

37. Yanhua Chen, Manjeet Rege, Ming Dong, and Jing Hua, "Incorporating User Provided Constraints into Document Clustering," In *Proceedings of IEEE Conference on Data Mining* (ICDM), pp. 103-112, 2007.

38. Guangyu Zou, Jing Hua, and Ming Dong, "Integrative Information Visualization of Multimodality Neuroimaging Data," In *Proceedings of the 15th Pacific Graphics Conference* (PG), pp. 473-476, 2007.

39. Manjeet Rege, Ming Dong, and Jing Hua, "Clustering Web Images with Multimodal Features," In Proceedings of *ACM Multimedia* (ACMMM), pp. 317-320, 2007.

40. Yuanhong Li, Ming Dong, and Jing Hua, "Localized Feature Selection for Clustering and Its Application in Image Grouping," In *Proceedings of International Conference on Multimedia & Expo* (ICME), pp. 651-654, 2007.

41. Guangyu Zou, Jing Hua, and Otto Muzik, "Non-rigid Surface Registration Using Spherical Thin-plate Splines," In *Proceedings of the 10th International Conference on Medical Image Computing and Computer Assisted Intervention* (MICCAI), pp. 367-374, 2007.

42. Cui Lin, Shiyong Lu, Danqing Wu, Jing Hua, and Otto Muzik, "Coclustering Based Parcellation of Human Brain Cortex Using Diffusion Tensor MRI," In *Proceedings of International Symposium on Bioinformatics Research and Applications* (ISBRA), pp. 539-550, 2007.

43. Yunhao Tan, Jing Hua, and Ming Dong, "Feature Curve-Guided Volume Reconstruction from 2D Images," In *Proceedings of IEEE International Symposium on Biomedical Imaging*, pp. 716-719, 2007.

44. Danqing Wu, Chang Liu, Guangyu Zou, Jing Hua, and Otto Muzik, "Contour Mapping for Neurosurgery Outcome Evaluation," In *Proceedings of IEEE International Symposium on Biomedical Imaging*, pp. 21-24, 2007.

45. Yunhao Tan, Jing Hua, and Ming Dong, "3D Reconstruction from 2D Images with Hierarchical Continuous Simplices," In *the 25th Computer Graphics International Conference*, June 2007. (The paper appeared in *The Visual Computer*).

46. Darshan Pai, Guangyu Zou, Jing Hua, Xianfeng Gu, Ming Dong, and Otto Muzik, "A Conformal and Statistical Surface Mapping Method for 3D PET Image Analysis," In

Proceedings of the Ninth International Conference on Computer Graphics and Imaging, pp. 1-8, 2007.

47. Changbo Yang, Ming Dong, and Jing Hua, "Region-Based Image Annotation Using Asymmetrical Support Vector Machine-Based Multiple-Instance Learning," In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), pp. 2057-2063, New York, NY, 2006.
48. Guangyu Zou, Jing Hua, Xianfeng Gu, and Otto Muzik, "An Approach for Intersubject Analysis of 3D Brain Images based on Conformal Geometry," In *Proceedings of International Conference on Image Processing*, pp. 1193-1196, 2006.
49. Chang Liu, Jing Hua, Lixin Wang, and Ruwei Dai, "An Integrative Neural Network System with Feedback Control for Classification," In *Proceedings of International Joint Conference on Neural Network*, pp. 1546-1553, 2006.
50. Guangyu Zou, Yongjian Xi, Greg Heckenberg, Ye Duan, Jing Hua, and Xianfeng Gu, "Integrated Modeling of PET and DTI Information based on Conformal Brain Mapping," In *Proceedings of SPIE: Medical Imaging*, Vol. 6143, 614321, 2006.
51. Yongjian Xi, Ye Duan, and Jing Hua, "Iso-surface Extraction by Front propagation," In *Proceedings of the 13th Pacific Graphics Conference*, pp. 172 - 175, 2005.
52. Greg Heckenberg, Yongjian Xi, Ye Duan, Jing Hua, and Otto Muzik, "Thalamus Segmentation from MRI Images by Lagrangian Surface Flow," In *Proceedings of 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (IEEE-EMBS05), pp. 3039-3042, 2005.
53. George Liang, Jing Hua, and Weiping Ren, "Volumetric Histology Data Visualization and Quantitative Analysis," In *Proceedings of 2005 NAFIPS Annual Conference on Soft Computing for Real World Applications*, pp. 638-643, June 2005.
54. Darshan Pai, Jiafeng Jiang, Jing Hua, Ye Duan, Otto Muzik, and Shiyong Lu, "Segmentation of Brain Structures Using PDE-Driven Dynamic Growing," In *Proceedings of 2005 NAFIPS Annual Conference on Soft Computing for Real World Applications*, pp. 424-428, June 2005.
55. Jing Hua, Ye Duan, and Hong Qin, "Design and Manipulation of Polygonal Models in a Haptic, Stereoscopic Virtual Environment," In *Proceedings of International Conference on Shape Modeling and Applications*, pp. 146-155, June 2005.
56. Jing Hua, Ying He, and Hong Qin, "Multiresolution Heterogeneous Solid Modeling and Visualization Using Trivariate Simplex Splines," In *Proceedings of the Ninth ACM Symposium on Solid Modeling and Applications*, pp. 47 – 58, Genova, Italy, June 2004. (Best Paper Award)
57. Ye Duan, Jing Hua, and Hong Qin, "Direct Sketching of 3D Shapes on Polygonal Models," In *the Proceedings of the Eighth Conference on Geometric Design and Computing*, 2004.
58. Ye Duan, Jing Hua, and Hong Qin, "*HapticFlow*: PDE-Based Mesh Editing with Haptics," In *the 17th International Conference on Computer Animation and Social Agents (CASA 2004)*, pp. 193-200, Geneva, Switzerland, July 7-9, 2004.
59. Xiaohu Guo, Jing Hua, and Hong Qin, "Point Set Surface Editing Techniques based on Level-Sets," In *Proceedings of Computer Graphics International*, pp. 52 – 59, Hersonissos, Crete, Greece, June 2004.
60. Jing Hua and Hong Qin, "Free-Form Deformations via Sketching and Manipulating Scalar Fields," In *Proceedings of the Eighth ACM Symposium on Solid Modeling and Applications*, pp. 328 - 333, Seattle, WA, June 2003.

61. Hui Xie, Jianning Wang, Jing Hua, Hong Qin, and Arie Kaufman, "Piecewise C^1 Continuous Surface Reconstruction of Noisy Point Clouds via Local Implicit Quadric Regression," In *IEEE Visualization '03 Conference Proceedings*, pp. 91-98, Seattle, WA, October 2003.
62. Jing Hua, "Modeling, Manipulating, and Visualizing Continuous Volumetric Data: A Novel Spline-based Approach," In *2003 IBM Graphics and Visualization Student Symposium*, IBM TJ Watson Research Center, New York, November 2003. (Invited)
63. Jing Hua and Hong Qin, "Haptics-based Volumetric Modeling Using Dynamic Spline-based Implicit Functions," In *Proceedings of IEEE/ACM SIGGRAPH Symposium on Volume Visualization and Graphics (VolVis '02)*, pp. 55 - 64, Boston, MA, October 2002.
64. Jing Hua and Hong Qin, "Dynamic Implicit Solids with Constraints for Haptic Sculpting," In *Proceedings of International Conference on Shape Modeling and Applications (Shape Modeling International)*, pp. 119 - 128, Banff, Alberta, Canada, May 2002.
65. Jing Hua and Hong Qin, "Haptic Sculpting of Volumetric Implicit Functions," In *Proceedings of the Ninth Pacific Conference on Computer Graphics and Applications (Pacific Graphics)*, pp. 254 - 264, Tokyo, Japan, October 2001.
66. Lixin Wang, Jing Hua, and Ruwei Dai, "An Integrated Pattern Recognition System and Its Application," In *Proceedings of the Fifth International Conference on Document Analysis and Recognition,* pp. 245-248, Bangalore, September 1999.
67. Jing Hua, Yue Fei, and Ruwei Dai, "A System to the Analysis of Sentences based on the Syntax-Semantics Concurrent Model," In *Proceedings of International Conference on Information Processing*, pp. 258 - 263, Beijing, China, 1998.
68. Jing Hua, Guiying Xu, and Yongji Wang, "An Auto-Tuning PI Predictive Controller and Its Applications," In *Proceedings of National Conference on Intelligent Automation*, pp. 550 - 555, 1998.

Refereed Workshop Papers and Extended Abstracts

1. O. Muzik, D. Pai, C. Juhasz, J. Hua, "Integrative Analysis of PET, ECOG and DTI Data in Order to Assess the Spatial Relationship Between Multimodality Data Sets in Children with Epilepsy," in *the 29th International Epilepsy Congress*, Aug. 28-Sept. 01, 2011, EPILEPSIA 52: 14-14 Sp. Iss. SI Suppl. 6 AUG 2011.
2. A. Shah, D. Barkmeier, Y. Tran, D. Fuerst, J. Loeb, D. Pai, J. Hua, S. Mittal, Epileptogenic zones are often far removed from brain tumors: An intracranial EEG analysis, In *the American Epilepsy Society's Annual Meeting*, 2010.
3. Darshan Pai, Jing Hua, and Hamid Soltanian-zadeh, "Evaluation of specific fiber bundles using brain mapping and registration of diffusion tensor data," In *the 6th Annual World Congress for Brain Mapping and Image Guided Therapy*, 2009.
4. Otto Muzik, Darshan Pai, Malek Makki, Anita Dias, Jing Hua and Harry Chugani, "Application of Probabilistic Fiber Tracking for the Quantitative Assessment of the Connectivity Pattern between Basal Ganglia and Frontal Cortex in Children with Tourette Syndrome," In *Proceedings of 2008 Annual Meeting of International Society for Magnetic Resonance in Medicine* (ISMRM), 2008.
5. A. Dias, O, Muzik, D. Pai, M Makki, J Hua, H.T. Chugani, Quantitative assessment of the connectivity pattern between caudate nucleus and frontal cortex in children with Tourette syndrome, in *the 133rd Annual Meeting of the American-Neurological-Association*, SEP 21-24, 2008, *ANNALS OF NEUROLOGY* 64: S102-S103 Suppl. 12 2008

6. Otto Muzik, Darshan Pai, Csaba Juhasz, Eishi Asano, Malek Makki, Jing Hua, and Harry Chugani, "Integrative Analysis of Functional, Anatomical and Electrophysiological Data in Pediatric Epilepsy," In *the Epilepsy Congress*, 2008.

7. Artem Chebotko, Cui Lin, Xubo Fei, Zhaoqiang Lai, Shiyong Lu, Jing Hua, and Farshad Fotouhi, "VIEW: a VIsual SciEntific Workflow management system," In *Proceedings of the first IEEE International Workshop on Scientific Workflows* (SWF 07), in conjunction with the IEEE 2007 International Conference on Web Services (ICWS'07), July 9-13, 2007, Salt Lake City, Utah, USA.

8. Daniel Pandian, Ming Dong, Jing Hua, and E. Mark Haacke, "Brain Tumor Detection Using Scale Invariant Feature Transform," In *Proceedings of 2007 Annual Meeting of International Society for Magnetic Resonance in Medicine* (ISMRM), 2007.

9. Jeffrey A. Loeb, Daniel T. Barkmeier, Thomas L. Beaumont, Jing Hua, and Aashit Shah, "Mapping Epileptic Borders and Activity-Dependent Molecular Markers onto Anatomic Structures in Human Epileptic Neocortex," In *the 61st Annual Meeting of the American Epilepsy Society*, 2007.

10. Otto Muzik, Jing Hua, Darshan Pai, Guangyu Zou, Diane Chugani, Eishi Asano and Harry Chugani. "EPITOOL- A Multimodality framework for integrative analysis of functional, anatomical and electrophysical data in epilepsy", In *Proceedings of 8th International Conference on Quantification of Brain Function with PET* (BrainPET '07), Osaka, Japan, 2007.

11. Yunhao Tan, Jing Hua, and Weiping Ren, "Correlation Analysis between 3D Histology and microCT Imaging for Non-invasive Diagnosis of Osteolysis," In *the Annual Joint Molecular Imaging Conference*, 2007.

12. Changbo Yang, Daniel Pandian, Ming Dong, Jing Hua, and E. Mark Haacke, "Automatic Tumor Detection and Recognition in 3D MR Imaging," In *the Annual Joint Molecular Imaging Conference*, 2007.

13. Weiping Ren, Otto Muzik, Tom Mongner, Pulak Chakraborty, Yunhao Tan, Bin Wu, and Jing Hua, "Assessing Implant Wear-Induced Inflammation Using PET [11C] PK11195 Imaging in a Rat Model of Knee Joint Replacement," In the 53rd Annual Meeting of the Orthopaedic Research Society, 2007.

14. Guangyu Zou, Darshan Pai, Jing Hua, and Otto Muzik, "Objective Detection of Cortical Abnormalities from Multimodality Imaging: A Statistical Approach," In the Annual Joint Molecular Imaging Conference, 2007.

15. Cui Lin, Shiyong Lu, Xuwei Liang, and Jing Hua, "GCA: A Co-clustering Algorithm for Thalamo-Cortical Connectivity Analysis," *IEEE ICDM 2006 Workshop on Data Mining in Bioinformatics,* 2006.

16. Xing Peng, Weiping Ren, Bin Wu, Mao Li, Jing Hua and Paul H. Wooley, "Rat Root Apical Bone Resorption Model: A New Aseptic Loosening Model," In the Annual Meeting of Society for Biomaterials, Pittsburgh, PA, April 2006.

17. Jing Hua, Hui Xie, and Hong Qin, "Sketch-based Adaptive Free-Form Deformation," In the Eighth SIAM Conference on Geometric Design and Computing, Seattle, WA, November 2003.

18. Xiaohu Guo, Jing Hua, and Hong Qin, "Dynamic Points: A Real-time Sculpting System on Point Set Surfaces," In the Eighth SIAM Conference on Geometric Design and Computing, Seattle, WA, November 2003.

19. Ye Duan, Jing Hua, and Hong Qin, "Explicit Geometric Surface Flow for Mesh Editing," In the Eighth SIAM Conference on Geometric Design and Computing, Seattle, WA, November 2003.

20. Hui Xie, Jing Hua and Hong Qin, "Optimization-driven Subdivision Surface Design," In the Eighth SIAM Conference on Geometric Design and Computing, Seattle, WA, November 2003.
21. Jing Hua and Hong Qin, "Real-time Volume Sculpting System Using Implicit Functions," In the Seventh SIAM Conference on Geometric Design and Computing, pp. 30 - 31, Sacramento, CA, November 2001.

DISSERTATIONS/THESES DIRECTED

Graduated Students and Scholars:

Post-Doctoral Fellow

1. **Wei Zeng**, Ph.D., " Symmetric Conformal Mapping for Surface Matching and Registration," August 2010 (Tenure-track assistant professor Florida International University).

Visiting Scholars

Xiaoyan Jiang, Ph.D.

Jie Jiang, Ph.D.

Zhaohui Cai, Ph.D.

PH.D.

1. **Jiaxi Hu**, Ph.D., "Shape Analysis Using Spectrum Geometry," December 2014. (Immediate Appointment after Graduation: Google).
2. **Darshan Pai**, Ph.D., "Visual Exploration and Information Analytics of High-Dimensional Medical Images," February 2013 (Immediate Appointment after Graduation: Research/Engineering Staff at GE Healthcare)
3. **Vahid Taimouri,** Ph.D., "Shape analysis in shape space," January 2012 (Immediate Appointment after Graduation: Research Fellow at Harvard University).
4. **Chang Liu**, Ph.D., "Deformable Meshes for Shape Recovery: Models and Applications," September 2011 (Immediate Appointment after Graduation: Research Staff at Henry Ford Health System).
5. **Zhaoqiang Lai**, Ph.D., "Multi-scale and Multi-spectral Shape Analysis: From 2D to 3D," August 2011 (Immediate Appointment after Graduation: Research Staff at Gamma Technologies, Inc.)
6. **Yunhao Tan, Ph.D.**, Ph.D.: "Heterogeneous Modeling Using Multivariate Simplex Spline", August 2010. (Immediate Appointment after Graduation: Microsoft)
7. **Guangyu Zou**, **Ph.D.**, Ph.D.: "Multiscale Geometry Constrained Shape Diffeomorphism", November 2008. (General Motors Research)
8. **Cui Lin**, **Ph.D.**, "Data and Services Integration in Scientific Workflows," July 2010 (co-advising). *Primary advisor: Shiyong Lu.* (Tenure-track Assistant Professor at California State University)

M.S.

9. **Xinyu Zhang**, **M.S.**, "Single-camera based 3D face tracking and animation," 2015. (Immediate Appointment after Graduation: SONY Playstation, CA).
10. **Xiaodong Jiang, M.S.**, Master thesis: "Accurate Real-time Full Body Motion Reconstruction with Single Depth Camera," June 2013 (AET Integration).

11. **Danqing Wu**, **M.S.**, Master thesis: "Constrained Conformal Surface Mapping and Registration," 2007 (Immediate Appointment after Graduation: Autodesk, Inc.)
12. **Neha Chandila**, **M.S.**, Master thesis: "Constraint Based Region Growing with Local Shape Fitting," 2007. (Immediate Appointment after Graduation: Senior IT Consultant, PMA Consultants at Chicago, IL)
13. **Xuwei Liang**, **M.S.**, Master thesis: "Visual Analytics in Diffusion Tensor Imaging," Summer 2006 (Immediate Appointment after Graduation: Ph.D. student in U of Kentucky)

B.S

14. **Gus Nassar**, **B.S.** (Undergraduate Honor Program), BS thesis: "Algorithms for video processing on rainbow effects," Dec. 2004.
15. **Martin Alther**, **B.S.** "Virtual Prototype Modeling and Simulation of a Real-World Environment", 2007.

Current Visiting Scholars:

1. **Yuanfeng Lian**
2. **Huaiwei Cong**

Current Ph.D. Students:

1. **Hai Jin**, Ph.D. student
2. **Nasim Hamidian**, Ph.D. student
3. **Ehsan Kazemy**, Ph.D. student
4. **Pavan Venkatavasava**, Ph.D. student

Current Master Students:

1. **Shaofeng Shu**

TEACHING EXPERIENCE

Advanced Visual Computing
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Interactive Data Visualization
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

PROFESSIONAL SERVICE ACTIVITIES

Editorial Board Member of The Open Virtual Reality Journal, 2008 – 2014
Editorial Board Member of ISRN Computer Graphics, 2011 – 2013
Editorial Board Member of Scientific Journals International, 2008 – 2016

Editorial Board Member of International Journal of Technology Enhanced Learning, 2007 – present
Editorial Board Member of International Journal of Digital Culture, 2008 – present

NSF Panelist and Reviewer, since January 2006 ~

Porgram Chair of ICSSC 2015
Chair of ICMLA BIGDATA Program ICMLA 14
Session Chair of CGI 2013
Session Chair of ICME 2007

Program Committee Member of GMP 17 | BioImaging 17
Program Committee Member of IEEE VIS 16 | GMP 16 | BioImaging 16
Program Committee Member of IEEE VIS 15 | GMP 15 | BioImaging 15
Program Committee Member of IEEE VIS 14 | GMP 14 | MSI 14 | BioImaging 14
Program Committee Member of IVIC 13 | BioImaging 13
Program Committee Member of PG 12 | ASM 12 | ICALIP 12 | SIBGRAPI 2012
Program Committee Member of PG 11 | SIBGRAPI 11
Program Committee Member of PG 10 | SMI 10 | ICALIP10
Program Committee Member of PG 09 | SMI 09 | ASM 09
Program Committee Member of CASA 08 | SMI 08 | ASM 08 | HAID 08
Program Committee Member of IEEE HAVE 07 | CAD/Graphics 07 | ASM 07 | ISCAMP 07 | SIBGRAPI 07 | SWF 07
Program Committee Member of SIBGRAPI 06
Program Committee Member of SIBGRAPI 05 | IEEE Volume Graphics 05