

Jing Hua

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RESEARCH INTERESTS

Visualization and Computer Graphics

-(Scientific/information visualization, geometric analysis, shape modeling, physically-based modeling)

3D Image Analytics and Informatics

-(geometric techniques for 3D image analysis, learning and mining algorithms for imaging informatics, biomedical imaging applications)

EDUCATION

Ph.D. in Computer Science, 2004

State University of New York at Stony Brook

Dissertation: DIVE: Dynamic Inhomogeneous Volumetric Environment for Graphics and Visualization

Advisor: Hong Qin, Professor

M.S. in Computer Science, 2002

State University of New York at Stony Brook

M.E. in Pattern Recognition and Artificial Intelligence, 1999

Institute of Automation, Chinese Academy of Sciences (CAS)

Advisor: DAI, Ruwei, Fellow of Chinese Academy of Science

B.E. in Electrical Engineering, 1996

Huazhong University of Science and Technology (HUST)

PROFESSIONAL EXPERIENCE

Associate Professor with Tenure

8/2009 – present

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

Research and Teaching Assistant

8/1999 - 7/2004

SUNY at Stony Brook, Department of Computer Science, Stony Brook, New York, USA

Summer Internship Research

6/2000 - 8/2000

Symbol Technology, Inc., R&D Lab, Holtsville, New York, USA

RESEARCH GRANTS

External grants

1. **Principal Investigator** (Lead). Collaborative Research: Coordinated Visualization for Comparative Analysis of Cross-subject, Multi-measure, Multi-dimensional Imaging Data. National Science Foundation (NSF). 8/01/2009-7/31/2012, \$500,000.
2. **Principal Investigator**. EAGER: Geometric Mapping and Diffusion for 3D Imaging Informatics. National Science Foundation (NSF). 9/01/2009-8/31/2012, \$90,727.
3. **Principal Investigator** (Lead). Collaborative Research: Integrated Modeling and Learning of Multimodality Data across Subjects for Brain Disorder Study. National Science Foundation (NSF). 9/01/2007-8/31/2011, \$455,300.
4. **Co-Principal Investigator**. CRI: Acquisition of Research Infrastructure for Knowledge-enhanced, Large-scale Learning of Multimodality Visual Data. National Science Foundation (NSF). 5/1/2008-4/30/2011, \$295,022 (PI: Ming Dong).
5. **Co-Principal Investigator**. Electrical, Molecular and Clinical Correlates of Human Interictal Spiking. National Institutes of Health (NIH). 1R01NS058802-01A2. 6/1/2008-5/31/2013. \$1,611,594. (PI: Jeffrey Loeb, other Co-PIs: Aashit Shah, Darren Fuerst).
6. **Co-Principal Investigator**. Longitudinal Neuroimaging in Sturge-Weber Syndrome. National Institutes of Health (NIH). 2R01NS041922-05A1. 7/1/2008-4/30/2013. \$1,485,165. (PI: Csaba Juhasz, other Co-PIs: Harry Chugani).
7. **Co-Principal Investigator**. HyperEye: Susceptibility Weighted Imaging-based Informatics Tools for Brain Tumor Studies. 21st Century Jobs Funds. 1/01/2007-12/31/2010, \$1,174,404 (including WSU match) (PI: Ming Dong, other Co-PI: E. Mark Haacke).
8. **Principal Investigator**. An Immersive, Interactive Visualization Environment for Large-scale Data and Visual Analytics. Ford Motor Company. 1/1/2010-12/31/2011, \$180,000.
9. **Co-Principal Investigator**. Software Tool for Neuroimaging in Epilepsy. Michigan Technology Tri-Corridor. 9/1/2005-8/31/2008, \$475,881 (including WSU match) (PI: Otto Muzik, other Co-PI: Shiyong Lu) (*Completed*).
10. **Principal Investigator**. Virtual Histology with Volumetric Computerized Tomography. Michigan Technology Tri-Corridor. 10/01/2005-9/30/2008, \$401,809 (including WSU match) (*Completed*).

Internal grants

1. **Principal Investigator**. Multiscale Geometry-guided Data and Visual Analytics for Large-scale Medical Imaging Database. WSU-GRA Competition. \$33,000, 9/1/2009-8/31/2010.
2. **Principal Investigator**. Visual Neuro-Analytics: A Computational Thinking Framework for Neuroimaging and Neuroscience Applications. WSU-GRA Competition. \$33,000, 9/1/2008-8/31/2009.
3. **Principal Investigator**. A Computational Modeling and Statistical Learning Framework for Brain Disorder Study. WSU-GRA Competition. \$33,000, 9/1/2007-8/31/2008.
4. **Principal Investigator**. A Novel Computational Framework for Quantitative Analysis of Fiber Tract Connections in the Living Human Brain. WSU-GRA Competition. 9/1/2005-8/31/2006, \$33,000.

5. **Principal Investigator.** Multivariate Simplex Splines for Advanced Shape Design. WSU Faculty Research Funds. 5/1/2005-4/30/2006, \$10,000.
6. **Co-Principal Investigator.** A Computational Model of Human Epilepsy. WSU Research Enhancement Foundation. 5/31/2007-4/30/2008, \$292,609. (PI: Jeff Loeb, and other Co-PIs: Aashit Shah, Shiyong Lu, Farshad Fotouhi, et al.).

PUBLICATIONS

Peer-Reviewed Journal Papers

1. 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.
2. 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.
3. **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.
4. 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.
5. 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.
6. Yunhao Tan, **Jing Hua**, and Hong Qin, "Physically Based Modeling and Simulation with Dynamic Spherical Volumetric Simplex Splines," *Computer-Aided Design*, 2008 (Invited as one of the best papers in ACM SPM 2008).
7. Jiayi 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.
8. 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.
9. 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, 2008.
10. Yanhua Chen, Manjeet Rege, Ming Dong, and **Jing Hua**, "Nonnegative Matrix Factorization for Semi-supervised Data Clustering," *Knowledge and Information Systems*, 2008.
11. Cui Lin, Shiyong Lu, Xuwei Liang, and **Jing Hua**. "Cocluster Analysis of Thalamo-Cortical Fiber Tracts Extracted from Diffusion Tensor MRI," *International Journal of Data Mining and Bioinformatics*, 2008.
12. Yuanhong Li, Ming Dong, and **Jing Hua**, "Localized Feature Selection for Clustering," *Pattern Recognition Letters*, Vol. 29, No. 1, pp. 10 - 18, 2008.

13. Yunhao Tan, **Jing Hua**, and Ming Dong, “3D Reconstruction from 2D Images with Hierarchical Continuous Simplices,” *The Visual Computer*, Vol. 23, No. 9, 905-914, 2007.
14. 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.
15. 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*, 2007.
16. Greg Heckenberg, Yongjian Xi, Ye Duan, and **Jing Hua**. “Brain Structure Segmentation from MRI by Geometric Surface Flow,” *International Journal of Biomedical Imaging*, 2006.
17. 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*, 2006.
18. **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, 2005. (Invited)
19. Ye Duan, **Jing Hua**, and Hong Qin, “Interactive Shape Modeling Using Lagrangian Surface Flow,” *The Visual Computer*, Vol. 21, No. 5, 2005.
20. **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.
21. **Jing Hua** and Hong Qin, “Scalar-Field-Guided Adaptive Shape Deformation and Animation,” *The Visual Computer*, Vol. 20, No. 1, pp. 47 – 66, 2004.
22. 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.
23. 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.
24. 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.
25. **Jing Hua**, Guiying Xu, and Yongji Wang, “A Dynamic Matrix Control Algorithm Applied to Long Time Delay Processes,” *Chinese Journal of Metallurgical Industry Automation*, May 1999.
26. **Jing Hua** and Guiying Xu, “A Single-Chip Computer based Control System for Distributed Electronic Heating Systems,” *Chinese Journal of Computing Technology and Automation, Special Issue, October 1996*.

Submitted Journal Papers

1. Guangyu Zou, Otto Muzik, Xianfeng Gu, and **Jing Hua**, “Statistical Conformal Surface for 3D Image Analysis,” *IEEE Transactions on Visualization and Computer Graphics*, 2009 (major revision).
2. Cui Lin, Darshan Pai, Shiyong Lu, Otto Muzik, and **Jing Hua**, “Co-clustering for Cross-subject Fiber Tract Analysis through Diffusion Tensor Imaging,” *IEEE Transactions on Information Technology in Biomedicine*, 2009 (minor revision).

3. Otto Muzik, Anita S.D. Saporta¹, Darshan Pai, Guangyu Zou, Balint Alkonyi¹, Csaba Juhasz and **Jing Hua**, "Performance Evaluation of a Software Environment for Integrative Analysis of Multi-modality Neuroimaging Data," *IEEE Transactions on Medical Imaging*, 2009 (under first round review).

Peer-Reviewed Conference Papers

1. Guangyu Zou, **Jing Hua**, Zhaoqiang Lai, Xianfeng Gu, and Ming Dong, "Intrinsic Geometric Scale Space by Shape Diffusion," In *IEEE Visualization Conference*, 2009 (The journal version appeared in IEEE TVCG).
2. Yanhua Chen, Lijun Wang, Ming Dong, and **Jing Hua**, "Exemplar-based Visualization of Large Document Corpus," In *IEEE InfoVis Conference*, 2009 (The journal version appeared in IEEE TVCG).
3. 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)*, 2009.
4. Jiayi Hu and **Jing Hua**, "Salient Spectral Geometric Features for Shape Matching and Retrieval," In *the 27th Computer Graphics International Conference*, 2009 (The journal version to be included in *The Visual Computer*).
5. 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.
6. 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)*, 2008.
7. 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.
8. **Jing Hua**, Zhaoqiang Lai, Ming Dong, Xianfeng Gu, and Hong Qin, "Geodesic Distance-Weighted Shape Vector Image Diffusion," In *IEEE Visualization Conference*, 2008 (The journal version appeared in IEEE TVCG).
9. Chang Liu, Jiayi 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*, 2008.
10. 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)*, 2008 (Regular full paper).
11. 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)*, 2008.
12. 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)*, 2008.

13. 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)*, 2007 (Regular Paper).
14. Guangyu Zou, **Jing Hua**, and Ming Dong, "Integrative Information Visualization of Multimodality Neuroimaging Data," In *Proceedings of the 15th Pacific Graphics Conference (PG)*, 2007.
15. Manjeet Rege, Ming Dong, and **Jing Hua**, "Clustering Web Images with Multimodal Features," In *Proceedings of ACM Multimedia (ACMMM)*, 2007.
16. 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)*, 2007.
17. 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)*, 2007.
18. 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)*, 2007.
19. Yunhao Tan, **Jing Hua**, and Ming Dong, "Feature Curve-Guided Volume Reconstruction from 2D Images," In *Proceedings of IEEE International Symposium on Biomedical Imaging*, 2007.
20. 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*, 2007.
21. 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 journal version included in *The Visual Computer*).
22. 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*, 2007.
23. 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)*, New York, NY, 2006.
24. 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*, 2006.
25. 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*, 2006.
26. 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.
27. Yongjian Xi, Ye Duan, and **Jing Hua**, "Iso-surface Extraction by Front propagation," In *Proceedings of the 13th Pacific Graphics Conference*, pp. 172 - 174, 2005.
28. 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)*, 2005.

29. 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*, June 2005.
30. 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*, June 2005.
31. **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*, June 2005.
32. **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**)
33. 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.
34. 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)*, Geneva, Switzerland, July 7-9, 2004.
35. 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.
36. **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.
37. 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.
38. **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)
39. **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.
40. **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.
41. **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.
42. 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, India, September 1999.
43. **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.

44. **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. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. Daniel T. Barkmeier, Thomas L. Beaumont, **Jing Hua**, Aashit Shah, and Jeffrey A. Loeb, "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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.

12. 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.
13. **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.
14. 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.
15. 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.
16. 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.
17. **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.

Thesis and Technical Reports

- 1 Jing Hua, "DIVE: Dynamic Inhomogeneous Volumetric Environments for Graphics and Visualization," *Ph.D. Thesis*, Computer Science, SUNY at Stony Brook, August 2004.

PROFESSIONAL PRESENTATIONS

- "Geometric Computing in Medical Imaging Applications," *Invited talk at Stony Brook University*, January 2010.
- "Multiscale Geometric Processing," *Invited talk at Donghua University*, China, June 2009.
- "Data and Visual Analytics for Large-scale 3D Medical Imaging Database," *Invited talk at Shanghai University*, June 2009.
- "Geodesic Distance-Weighted Shape Vector Image Diffusion," In *IEEE Visualization Conference*, 2008.
- "Advanced Visual Analytics in Brain Imaging," *Invited talk at the TRUN workshop*, 2008.
- "Dynamic Volumetric Simplex Splines with Applications in Biomedicine," In *ACM Symposium on Solid and Physical Modeling*, 2008.
- "Statistical Conformal Model," *Invited talk at the Department of Electrical and Computer Engineering of the Wayne State University*, April 2008.
- "Advanced Volume Visualization of 3D Medical Data," *Invited talk at the Department of Biomedical Engineering of the Wayne State University*, February 2008.
- "Geometric Approaches for 3D Medical Image Analysis," *Invited talk at the University of Michigan at Dearborn*, 2007.
- "Correlation Analysis between 3D Histology and microCT Imaging for Non-invasive Diagnosis of Osteolysis," In *the Annual Joint Molecular Imaging Conference*, Rhode Island, Providence, 2007.

- "Objective Detection of Cortical Abnormalities from Multimodality Imaging: A Statistical Approach," In *the Annual Joint Molecular Imaging Conference*, Rhode Island, Providence, 2007.
- "Automatic Tumor Detection and Recognition in 3D MR Imaging," In *the Annual Joint Molecular Imaging Conference*, Rhode Island, Providence, 2007.
- "An Approach for Intersubject Analysis of 3D Brain Images based on Conformal Geometry," *IEEE International Conference on Image Processing (ICIP)*, Atlanta, Georgia, 2006.
- "Region-Based Image Annotation Using Asymmetrical Support Vector Machine-Based Multiple-Instance Learning," *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, New York, NY, 2006.
- "Novel Computational Techniques for Neuroimaging Data Modeling and Visualization," *Invited talk at CLAS Neuroscience DataBlitz 2006*, January 2006.
- "Design and Manipulation of Polygonal Models in a Haptic, Stereoscopic Virtual Environment," In *International Conference on Shape Modeling and Applications*, June 2005.
- "Visual Computing," *Invited talk at University of Michigan at Dearborn*, 2005.
- "Graphics and Visualization Research for Medical Applications," *Invited talk at Department of Neurological Surgery, Wayne State University*, November 2004.
- "Hierarchical Simplex Spline-based Graphical Modeling and Visualization," *Invited talk at the Computer Science Departmental Seminar, Wayne State University*, October 2004.
- "Computer Graphics and Visualization Research at Wayne State University," *Invited talk at NCSSMST STUDENT CONFERENCE, University of Michigan at Dearborn*, October 2004.
- "DIVE: Dynamic Inhomogeneous Volumetric Environments for Graphics and Visualization," *Ph.D. Dissertation Defense, SUNY at Stony Brook*, June 2004.
- "Dynamic Inhomogeneous Volumetric Environment for Graphics and Visualization," *Invited talk at the Toyota Technological Institute*, May 2004.
- "New Heterogeneous Volumetric Techniques for Visualization," *Guest Lecture at the SUNY at Stony Brook*, May 2004.
- "DIVE: Dynamic Inhomogeneous Volumetric Environment for Graphics and Visualization," *Invited talk at the Computer Science Department, University of Texas at Dallas*, April 2004.
- "Dynamic Inhomogeneous Volumetric Environment for Graphics and Visualization," *Invited talk at the Computer Science Department, George Mason University*, April 2004.
- "DIVE: Dynamic Inhomogeneous Volumetric Environment for Graphics and Visualization," *Invited talk at the Computer Science Department, Wayne State University*, February 2004.
- "DIVE: Dynamic Inhomogeneous Volumetric Environments for Computer Graphics and Visualization," *Preliminary Ph.D. Thesis Proposal, Computer Science, SUNY at Stony Brook*, December 2003.
- "Modeling, Manipulating, and Visualizing Continuous Volumetric Data: A Novel Spline-based Approach," *Invited talk at the IBM TJ Watson Research Center, New York*, November 2003.
- "Free-Form Deformations via Sketching and Manipulating Scalar Fields," In *the Eighth ACM Symposium on Solid Modeling and Applications*, Seattle, WA, June 2003.

- “Haptics-based Volumetric Modeling Using Dynamic Spline-based Implicit Functions,” In *IEEE/ACM SIGGRAPH Symposium on Volume Visualization and Graphics (VolVis '02)*, Boston, MA, October 2002.
- “Dynamic Implicit Models for Computer Graphics,” *Ph.D. Research Proficiency Examination Report, Computer Science, SUNY at Stony Brook, September 2002.*
- “Dynamic Implicit Solids with Constraints for Haptic Sculpting,” In *International Conference on Shape Modeling and Applications (Shape Modeling International)*, Banff, Alberta, Canada, May 2002.
- “A System to the Analysis of Sentences based on the Syntax-Semantics Concurrent Model,” In *International Conference on Information Processing, Beijing, China, 1998.*

TEACHING EXPERIENCE

Computer Graphics I 8/2009 – 12/2009
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Advanced Visual Computing 1/2009 – 5/2009
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II 1/2009 – 5/2009
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I 8/2008 – 12/2008
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Interactive Data Visualization 1/2008 – 5/2008
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II 1/2008 – 5/2008
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I 8/2007 – 12/2007
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II 1/2007 – 5/2007
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Advanced Visual Computing 1/2007 – 5/2007
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I 8/2006 – 12/2006
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II 1/2006 – 5/2006
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I 8/2005 – 12/2005
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics II **1/2005 – 5/2005**
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Computer Graphics I **8/2004 – 12/2004**
Wayne State University, Department of Computer Science, Detroit, Michigan, USA

Geometric Modeling and Physical Simulation (Seminar Coordinator) **1/2001 - 1/2002**
SUNY at Stony Brook, Department of Computer Science, Stony Brook, New York, USA

Foundations of Computer Science (Teaching Assistant) **9/1999 - 5/2001**
SUNY at Stony Brook, Department of Computer Science, Stony Brook, New York, USA

STUDENT EVALUATION SCORES (**The full score of Summative Class Rating is 15*)

Term	Crns	Students Responding	Q1		Q2		Q24		Summative Class Rating	Student Profile				Mean Sum
			Mean	Median	Mean	Median	Mean	Median		A (mean)	A (median)	B(mean)	B(median)	
F04	csc5870	20/26	3.9	4	4.2	4	3.9	4	12	4.8	5	4.8	5	9.5
W05	csc6870	6/9	4.3	4.5	4	4	4.5	4.5	12.8	4.8	5	4.7	5	9.5
F05	csc5870	12/13	4.7	5	4.4	4.5	4.7	5	13.8	4.8	5	4.9	5	9.7
W06	csc6870	9/9	4.2	4	4.8	5	4.7	5	13.7	4.8	5	4.9	5	9.6
F06	csc5870	8/8	4.5	5	4.5	5	4.6	5	13.6	4.4	5	4.4	4.5	8.8
W07	csc6870	10/12	4.7	5	4.4	5	4.7	5	13.8	4.3	5	4.2	4.5	8.5
W07	csc7991	8/8	4.5	5	4.8	5	4.6	5	13.9	4.8	5	4.8	5	9.5
F07	csc5870	7/8	4.3	4	4.6	5	5	5	13.9	4.7	5	4.7	5	9.4
W08	csc6870	6/7	4.7	5	4.2	4	4.7	5	13.5	4.3	4.5	4.7	5	9
W08	csc5991	6/6	4.8	5	4.8	5	5	5	14.7	5	5	4.7	5	9.7
F08	csc5870	7/9	4.9	5	4.6	5	5	5	14.4	4.9	5	4.9	5	9.7
W09	csc7991	6/6	5	5	5	5	5	5	15	5	5	5	5	10

POST-DOCTORAL RESEARCH FELLOWS:

Wei Zeng
Guangyu Zou

PH.D. ADVISEES:

Darshan Pai (class of 2005), passed the Qualifying Exam.
Chang Liu (class of 2005), passed the Qualifying Exam
Jiayi Hu (class of 2006), passed the Qualifying Exam
Zhaoqiang Lai (class of 2006), passed the Qualifying Exam
Cui Lin (class of 2006), passed the Qualifying Exam (Co-advising with Dr. Shiyong Lu)
Vahid Taimouri (class of 2007), passed the Proficiency Exam (Co-advising with Dr. Hamid Soltanian-Zadeh)

M.S. ADVISEES:

Hui Ouyang, part-time Master student, research topics: “Real-time Simulation of CAD Objects”.

GRADUATED STUDENTS:

Yunhao Tan, “Dynamic Multivariate Simplex Splines and Their Applications,” November 2009.

Guangyu Zou, Ph.D., “Multiscale Geometry Constrained Shape Diffeomorphism,” 2008. (Postdoc at Harvard University)

Xuwei Liang, M.S., “Visual Analytics in Diffusion Tensor Imaging,” 2006. (U Kentucky)

Danqing Wu, M.S., “Constrained Conformal Surface Mapping and Registration,” 2007. (Autodesk, Inc.)

Neha Chandila, M.S., “Constraint Based Region Growing with Local Shape Fitting,” 2007. (Senior IT Consultant, PMA Consultants)

AWARDS TO MY SUPERVISED PH.D. STUDENTS

- **Kevin Lai**: Excellent Graduate Research Assistant Award in the Department of Computer Science of Wayne State University, 2009
- **Jiaxi Hu**: Excellent Graduate Teaching Assistant Award in the Department of Computer Science of Wayne State University, 2009
- **Guangyu Zou**: Excellent Graduate Research Assistant Award in the Department of Computer Science of Wayne State University, 2008
- **Guangyu Zou**: MICCAI Travel Stipend Award, 2007
- **Darshan Pai**: Excellent Graduate Teaching Assistant Award in the Department of Computer Science of Wayne State University, 2008
- **Yunhao Tan**: One of the CGI Best Papers invited to the journal, The Visual Computer, 2007
- **Yunhao Tan**: ACM SPM Travel Award, 2008
- **Yunhao Tan**: One of the ACM SPM Best Papers invited to the journal of Computer-Aided Design, 2008

DIRECTED UNDERGRADUATE PROJECTS/THESES:

Martin Alther, "Virtual Prototype Modeling and Simulation of a Real-World Environment", 2007.

Gus Nassar, "Algorithms for Dynamic Rainbow Effect Removal in Video", 2005.

DISSERTATION AND THESIS COMMITTEE MEMBERSHIP

- Ph.D. Dissertation Committee Member for Thaer Wael Jayyousi, 2009
- Ph.D. Dissertation Committee Member for Mostafa Ziad, 2008
- Ph.D. Dissertation Committee Member for Yanhua Chen, 2007
- Ph.D. Dissertation Committee Member for Xiangdong Che, 2007
- Ph.D. Dissertation Committee Member for Raja' S. Alomari, 2006
- Ph.D. Dissertation Committee Member for J.Daniel Pandian Samuel, 2006
- Ph.D. Dissertation Committee Member for Rajeev K Agrawal, 2005
- Ph.D. Qualifying Exam Committee Member for Yezhou Sun, 2005
- Ph.D. Dissertation Committee Member for Changbo Yang, 2005
- Ph.D. Dissertation Committee Member for Yuanhong Li, 2005
- Ph.D. Dissertation Committee Member for Farhan Siddiqui, July 2005
- Ph.D. Dissertation Committee Member for Manjeet Rege, July 2005

- Master Thesis Committee Member for Thaer Jayyousi, 2008
- Master Thesis Committee Member for Patrick J. Franzel, 2007
- Master Thesis Committee Member for Xinrong Xie, 2006.
- Master Thesis Committee Member for Jane Wu, 2006
- Master Thesis Committee Member for Ronghui Hu, 2005
- Master Thesis Committee Member for Vidya Torquato, 2005
- Master Thesis Committee Member for Shoaib Ghias, May 2005
- Master Thesis Committee Member for Denise Comorski, 2005
- Master Thesis Committee Member for Aarti Kuman, 2004

AWARDS AND HONORS

- Excellence in Teaching Award, Liberal Arts and Sciences, Wayne State University, 2008
- Marquis Who's Who, 2008
- Wayne State University Faculty Research Award, 2005
- Best Paper Award from ACM Symposium on Solid Modeling and Applications, 2004
- Outstanding Teaching Assistant Award, SUNY at Stony Brook, 2001
- Outstanding Teaching Assistant Award, SUNY at Stony Brook, 2000
- Graduate Student Scholarship, SUNY at Stony Brook, 1999 ~ 2005
- Best Graduate Award, Institute of Automation, CAS, 1999
- "Academia Sinica Huawei Fellowship" awarded by CAS, 1998
- Honor Student Award. Institute of Automation, CAS, 1998
- "Mr. Dong Jianhua Fellowship" - Graduate School of CAS, 1997
- Best Graduate Award, HUST, 1996
- "Success Award" in the 2nd National College Student Electronics Design Contest, 1995
- "Mr. Zhao Shimei Fellowship" awarded by HUST, 1995
- "Jinling Fellowship" awarded by HUST, 1995
- Outstanding Student Scholarship, HUST, 1995
- Honor Student Award, HUST, 1995
- "Guanghua Fellowship" awarded by HUST, 1994
- Outstanding Student Scholarship, HUST, 1994
- Honor Student Award, HUST, 1994
- Outstanding Student Scholarship, HUST, 1993
- Honor Student Award, HUST, 1993

PROFESSIONAL SERVICE ACTIVITIES

- NSF Panelist and Reviewer since 2006
- Editorial Board Member of *International J. of Technology Enhanced Learning*, 2007 – present
- Editorial Board Member of *Scientific Journals International*, 2008 – present
- Editorial Board Member of *International J. of Digital Culture*, 2008 – present
- Editorial Board Member of *The Open Virtual Reality Journal*, 2009 – present
- Session Chair of ICME 2007
- Program Committee Member of SMI 2010
- Program Committee Member of SMI 2009
- Program Committee Member of SMI 2008
- Program Committee Member of IEEE HAID 2008
- Program Committee Member of CASA 2008
- Program Committee Member of ASM 2008
- Program Committee Member of IEEE HAVE 2007

Program Committee Member of CAD/Graphics 2007
Program Committee Member of SWF 2007
Program Committee Member of SIBGRAPI 2007
Program Committee Member of ASM 2007
Program Committee Member of ISCamp 2007
Program Committee Member of SIBGRAPI 2006
Program Committee Member of IEEE Volume Graphics 2005
Program Committee Member of SIBGRAPI 2005

Referee for

Journals

IEEE Transactions on Visualization and Computer Graphics
ACM Transactions on Graphics
IEEE Computer Graphics & Applications
IEEE Transactions on Medical Imaging
ACM Transactions on Computer
IEEE Multimedia
Journal of Computing and Information Science in Engineering
IEEE Transactions on Automation Science and Engineering
Springer Virtual Reality Journal
International Journal of Computational Geometry & Applications
Computer-Aided Design
Pattern Analysis & Applications
Numerical Methods in Engineering
Computing in Science & Engineering
Computer Graphics Forum
and many others ...

Conferences

IEEE Visualization
SIGGRAPH
IEEE Virtual Reality
ACM Symposium on Solid Modeling and Applications
Eurographics Workshop on Computer Animation and Simulation
ASME International Design Engineering Technical Conferences
Pacific Graphics
IEEE Computer Animation
IEEE Volume Graphics
SIBGRAPI
Eurographics
Computer Animation and Social Agents
IEEE Shape Modeling International
MICCAI
ISBI
and many others...

Memberships: IEEE

UNIVERSITY SERVICES

Computer Science Department Graduate Program Committee Member, 2006 – present
Michael Conrad Award Committee Member, 2005

Michael Conrad Award Committee Member, 2008
Scholarship Awards Committee Member, 2005 – 2006.
Social Committee Member, 2005 – 2008
Undergraduate Honor Program Advisor, 2006 – 2008
Personal & Salary Committee Member, 2007-2009.
Space Planning Committee, 2008
K-12 Outreaching Activities, 2004-2008
Public Demonstrations, 2004-2008

REFERENCES

Reference Letters Available Upon Request