# Yin Yang

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## RESEARCH INTERESTS

Computer graphics, Physics-based simulation, Biomechanical modeling, Visualization, Computational mechanics, Medical imaging analysis, Image processing, GPU programming, Computer-human interaction

## EDUCATION

**University of Texas at Dallas** - Richardson, Texas, USA
Ph.D. in Computer Science                                                                                                            2013
*Dissertation*: Physics-based Subspace Deformation
*Advisor*: Dr. Xiaohu Guo
**Jiangnan University** - Wuxi, Jiangsu, China
B.E. in Computer Science                                                                                                             2000

## PROFESSIONAL EXPERIENCE

**University of Texas at Dallas** - Richardson, Texas, USA
Teaching Assistant                                                            Aug. 2007-Jul. 2010, Aug. 2012-May, 2013
**Microsoft Research Asia** - Beijing, China
Research Intern                                                                                                   Mar. 2012-Jun. 2012
**University of Texas at Dallas** - Richardson, Texas, USA
Research Assistant                                                                                          Aug. Sep. 2010-Feb. 2012
**Southwestern Medical Center at Dallas** - Dallas, Texas, USA
Research Assistant                                                                                          Aug. Sep. 2010-Feb. 2012
**University of New Brunswick** - Fredericton, New Brunswick, Canada
Research Assistant                                                                                                 Aug. 2005-Jun. 2007

## PUBLICATIONS

### Journal Papers

**Accepted**

1. **Yin Yang**, Weiwei Xu, Xiaohu Guo, Kun Zhou, Baining Guo, "Boundary-Aware Multi-Domain Subspace Deformation", to appear in IEEE Transactions of Visualization and Computer Graphics, 2013 (TVCG, IF 2.44).

2. Ziying Tang, **Yin Yang**, Xiaohu Guo, Balakrishnan Prabhakaran, "Distributed Haptic Interactions with Physically-Based 3D Deformable Models over Lossy Networks", to appear in IEEE Transactions on Haptics, 2013 (TOH, IF 1.49).

3. **Yin Yang**, Xiaohu Guo, Jennell Vick, Luis Torres, Thomas Campbell, "Physics-Based Deformable Tongue Visualization", IEEE Transactions on Visualization and Computer Graphics Vol. 19, No. 5, pp. 811-823, 2013 (TVCG, IF 2.44).

4. **Yin Yang**, Zichun Zhong, Xiaohu Guo, Jing Wang, John Anderson, Timothy Solberg, Weihua Mao, "A Novel Markerless Technique to Evaluate Daily Lung Tumor Motion Based on Conventional Cone-Beam CT Projection Data", International Journal of Radiation Oncology Biology Physics, Vol. 82, No. 5, pp. e749-e756, 2012 (Red journal, IF 4.64).

5. **Yin Yang**, Meng Gong, Brigitte Leblon, Chui, Ying Hei, "Linear Window Correlation: New Image Processing Based Approach to Strain Distribution Analysis of Wood", in Canadian Journal of Forest Research, 41(11): 2141-2149, 2011 (CJFR, IF 1.69).

6. **Yin Yang**, Guodong Rong, Luis Torres, Xiaohu Guo, "Real-Time Hybrid Solid Simulation: Spectral Unification of Deformable and Rigid Materials", Computer Animation and Virtual Worlds, Vol. 21, Issue 3 - 4, pp. 151-159, 2010 (CAVW, IF 0.62).

7. **Yin Yang**, Meng Gong, Chui, Ying Hei, "New Image Analysis Algorithm for Calculating Percentage Wood Failure". Holzforschung, Vol 62, Issue 2, pp. 248-251, 2008 (IF 1.75).

8. Jinkun He, Zhengmin Chen, **Yin Yang**, "Algorithms of Stack Sequence Based on Operator and Its Implementation", Computer Engineering and Design, Vol. 27 No.12, 51-53, 2006.

### In Submission

1. Weihua Mao, Vasant Kearney, Lan Jiang, Yang Li, Zichun Zhong, **Yin Yang**, Xiaohu Guo, "An Initial Application of a Markerless Method to Evaluate Lung Tumor Motion Throughout Radiotherapy", Medical Physics, under revision.

## Conference Papers

1. Yuan Tuan, **Yin Yang**, Xiaohu Guo, Balakrishnan Prabhakaran, "A Multigrid Approach for Bandwidth and Display Resolution Aware Streaming of 3D Deformations," in Proceedings of ACM Multimedia Conference (MM 2013) Barcelona, Spain, October 2013.

2. **Yin Yang**, Xiaohu Guo, "Tongue Visualization for Specified Speech Task," ACM SIGGRAPH Conference (SIGGRAPH), Los Angeles, August 2012, poster.

3. **Yin Yang**, Xiaohu Guo, "Physics-Based Multi-Domain Subspace Deformation with Component Mode Synthesis", in Proceedings of IEEE Virtual Reality Conference (VR 2012) pp. 69-70, Orange County, March 2012 (*best poster, honorable mention*).

4. **Yin Yang**, Zichun Zhong, Guodong Rong, Xiaohu Guo, Jing Wang, Timothy Solberg, and Weihua Mao, "Real-Time GPU-Aided Lung Tumor Tracking", in Proceedings of Pacific-Rim Symposium on Image and Video Technology (PSIVT 2010) pp. 495-500, Singapore, November 2010 (*Travel grant award*).

5. **Yin Yang**, Zichun Zhong, Xiaohu Guo, John Anderson, Timothy Solberg, Weihua Mao, "A Novel Markerless Technique To Evaluate Daily Lung Tumor Motion", Annual Meeting of the American Society for Radiation Oncology (ASTRO 2010), San Diego, October 2010.

6. Ziying Tang, **Yin Yang**, Xiaohu Guo, Balakrishnan Prabhakaran, "On Supporting Collaborative Haptic Interaction with Physically-Based 3D Deformations", in Proceedings of IEEE International Symposium on Haptic Audio Visual Environments and Games (HAVE 2010) pp. 495-500, Phoenix, October 2010.

7. **Yin Yang**, Guodong Rong, Luis Torres, Xiaohu Guo, "Spectral Simulation of Hybrid Bodies with Deformable and Rigid Materials", in Proceedings of ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3DG 2010) pp. 10-1, Washington DC, February 2010, Poster.

8. Meng Gong, Makoto Nakatani, **Yin Yang**, M.T. Afzal, "Maximum compression ratios of softwoods produced in Eastern Canada", in Proceedings of 9th World Conference on Timber Engineering, Portland, Oregon, August, 2006.

## TALKS AND PRESENTATIONS

1. **Physics-Based Deformable Tongue Visualization**, IEEE VIS, Atlanta, October 2013.

2. **Boundary-Aware Multi-Domain Subspace Deformation**, ACM SIGGRAPH / Eurographics Symposium on Computer Animation (SCA), Los Angeles, July 2013.

3. **Tongue Visualization for Specified Speech Task**, ACM SIGGRAPH Conference (SIGGRAPH 2012), Los Angeles, August 2012.

4. **Physics-Based Multi-Domain Subspace Deformation with Component Mode Synthesis**, IEEE Virtual Reality Conference (VR 2012), Orange County, March 2012.

5. **GPU-Aided Lung Tumor Tracking**, UT Metroplex Day, Dallas, February 2011.

6. **Real-Time GPU-Aided Lung Tumor Tracking**, Pacific-Rim Symposium on Image and Video Technology (PSIVT 2010) Singapore, November 2010.

7. **Spectral Simulation of Hybrid Bodies with Deformable and Rigid Materials**, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3DG 2010), Washington DC, February 2010.

8. **Calculation of Percentage Wood Failure Using Image Analysis Approach**, Forest Products Society-Eastern Canadian Section and U.S. North East Section, Fredericton, Canada, June 2006.

# TEACHING

Teaching Assistant/Guest Instructor/Tutorial Speaker of
*Undergraduate level*
1. Programming Language (C/C++/JAVA)
2. Discrete Match
3. Data Structure
4. Algorithm Design and Analysis
5. Computer Graphics
6. Computer Animation
7. Game Programming
8. Computer Graphics and Art

*Graduate level*:
1. Algorithm Design and Analysis
2. Computer Graphics
3. Computer Animation
4. Physics-based Modeling
5. Geometry Modeling

# PROFESSIONAL ACTIVITY

(I have served as reviewer for the following journals and conferences)

- IEEE Transactions of Computer Graphics and Visualization
- Signal, Image and Video Processing
- Graphical Models
- Journal of Signal Processing Systems
- SCIENCE CHINA Information Sciences
- IEEE Pacific Visualization, 2012
- IEEE Virtual Reality, 2012
- IEEE Pacific Graphics, 2012
- IEEE Pacific Visualization, 2010