

Yimin Wang

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School of Computer Eng & Sci,
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CURRENT AFFILIATION **Shanghai University**, China
• School of Computer Engineering and Science June 2013 to present

RESEARCH INTERESTS
◇ Bioimage visualization and analytics ◇ Computer graphics
◇ Computational neuroscience ◇ Artificial intelligence
◇ Mixed reality ◇ Human computer interaction
◇ Image processing ◇ Geometric modeling

EDUCATION **Nanyang Technological University**, Singapore
Ph.D., School of Computer Engineering 2004 to 2009
• Thesis Topic: Free-form surface representation and approximation using T-splines
• Advisor: Associate Professor Jianmin Zheng
Fudan University, Shanghai, China
B.S., School of Computer Science 1999 to 2003
• Thesis Topic: Ontology based semi-automated information extraction

PAST PROFESSIONAL EXPERIENCE **Allen Institute for Brain Science**, Seattle, United States
• Visiting Scientist, worked with Hanchuan Peng Group on neuron morphology reconstruction and analysis April 2016 to July 2016

IBM Research - China
• Staff Researcher, Virtual World and 3D Internet October 2009 to June 2013

Nanyang Technological University, Singapore
• Research Fellow, School of Computer Engineering April 2009 to October 2009

ACADEMIC EXPERIENCE *Teaching Assistant*
• CPE102 / CSC102 : Introduction to Programming. 2006/2007 Semester 1
• CPE102 / CSC102 : Introduction to Programming. 2007/2008 Semester 1

Professional Activities
• Co-organizer, MICCAI 2019 Tutorial.
• Programm Committee, Symposium on GPU Computing & Applications 2013

Reviewer Experience

- Frontiers in Neural Circuits
- Neuroinformatics
- BMC Bioinformatics
- IEEE Transactions on Information Forensics and Security
- Journal of Visual Communication and Image Representation
- Journal of Computational and Applied Mathematics
- Applied Numerical Mathematics
- Journal of Medical Imaging and Health Informatics
- Virtual-Reality Continuum and its Applications in Industry 2008
- Geometric Modeling and Processing 2008
- Computer Graphics International 2011
- Computer Graphics International 2012
- IEEE International Conference on Service Operations and Logistics, and Informatics 2012
- Computational Visual Media 2012
- Pacific Graphics 2016

GRANTS

Research Grants

- Free-form surface representation using T-splines: investigation on the theory and the application in surface reconstruction. National Science Foundation of China, PI, 2015-2017.
- Essential problems on T-spline surface fitting. Open Project Program of the State Key Lab of CAD&CG, PI, 2015-2016.
- On the theory and methods of constructing feature-sensitive T-spline surfaces. Natural Science Foundation of Shanghai, PI, 2014-2017.
- Theory and algorithms for T-spline surfaces. Start up grant for young scholars in Shanghai, PI, 2014-2016.
- Novel film-making-suitable techniques in geometric modeling. Shanghai University filmology summit research grant, PI, 2015.

PUBLICATIONS

- [1] Yimin Wang et al. TeraVR empowers precise reconstruction of complete 3-D brain cell morphology in whole brains. *Nature Communications*, 2019.
- [2] Yimin Wang and Hanchuan Peng. A virtual reality platform for visualization, exploration, and annotation of brain-wide neuronal images. abstract in *Neuroscience 2018* (selected as SfN 2018 Hot Topic), 2018.
- [3] Yimin Wang, Zhi Zhou, Xiaoxiao Liu, Alessandro Bria, Yike Guo, and Hanchuan Peng. Disseminating vaa3d and its high-performance, open-source, cross-platform neuron image toolbox. abstract in *Neuroscience 2016*, 2016.
- [4] Zhenxing Qian, Xinpeng Zhang, Weiming Zhang, and Yimin Wang. Reversible contrast enhancement. In *International Conference on Cloud Computing and Security*, pages 18–27. Springer, 2016.
- [5] Yimin Wang and Jianmin Zheng. Curvature-guided adaptive T-spline surface fitting. *Computer-Aided Design*, 45(8–9):1095–1107, August 2013.

- [6] Yimin Wang, Jian Wang, Lijun Mei, and Qicheng Li. A virtual-learning service platform and its API based programming learning and design refinement. In *SOLI*, 2012.
- [7] Jianmin Zheng and Yimin Wang. Periodic T-splines and tubular surface fitting. In *Curves and Surfaces*, number 6920 in Lecture Notes in Computer Science, pages 731–746. Springer Berlin Heidelberg, January 2012.
- [8] Lijun Mei, Yimin Wang, Qicheng Li, Jian Wang, and Ziyu Zhu. A service-oriented framework for hybrid immersive web applications. In *International Conference on Web Services*, 2011.
- [9] Yimin Wang, Lijun Mei, Qi Cheng Li, Jian Wang, and Zi Yu Zhu. 3D virtual client center and its service oriented modeling. In *International Joint Conference on Service Sciences*, 2011.
- [10] Yimin Wang and Jianmin Zheng. Tubular triangular mesh parameterization and applications. *Computer Animation and Virtual Worlds*, 21(2):91–102, 2010.
- [11] Yimin Wang and Jianmin Zheng. Using periodic T-spline surfaces for virtual reality applications. In *International Conf. of ISAGA*, 2009.
- [12] Yimin Wang and Jianmin Zheng. Edge based parameterization for tubular meshes. In *VRCAI '08: Proceedings of The 7th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and Its Applications in Industry*, pages 1–6, New York, NY, USA, 2008. ACM.
- [13] Yimin Wang and Jianmin Zheng. Adaptive T-spline surface approximation of triangular meshes. In *Information, Communications & Signal Processing, 2007 6th International Conference on*, pages 1–5, 2007.
- [14] Yimin Wang and Jianmin Zheng. Control point removal algorithm for T-Spline surfaces. *Lecture Notes in Computer Science (Geometric Modeling and Processing (GMP) 2006)*, pages 385–396, 2006.
- [15] Jianmin Zheng, Yimin Wang, and Hock Soon Seah. Adaptive T-spline surface fitting to z-map models. In *GRAPHITE 2005*, pages 405–411. ACM, 2005.
- [16] Yimin Wang, Jianmin Zheng, and Hock Soon Seah. Conversion between T-Splines and hierarchical B-Splines. In *Computer Graphics and Imaging*, pages 8–13, 2005.

U.S. PATENTS

- [1] Auto Focus Device And Method For Liquid Crystal Display. US 9,835,930 B2. 2017.
- [2] Producing Sounds In A Virtual World And Related Sound Card. US 9,564,115 B2. 2017.
- [3] Managing software performance tests based on a distributed virtual machine system. US 9,529,693 B2. 2016.
- [4] Creation of Rhythmic Password and Authentication Based on Rhythmic Password. US 9,454,655 B2. 2016.
- [5] Method and apparatus for processing three-dimensional model data. US 9,135,749 B2. 2015.
- [6] Scheduling discrete event simulation. US 9,053,263 B2. 2015.
- [7] Building Controllable Clairvoyance Device In Virtual World. US 8,970,586 B2. 2015.
- [8] Method And Apparatus For Search In Virtual World. US 8,933,939 B2. 2015.
- [9] Method And System For Providing Images Of A Virtual World Scene And Method And System For Processing The Same. US 8,854,391 B2. 2014.
- [10] Generating three-dimensional virtual scene (US 2013/0135304 A1)

- [11] Human-Computer Interaction Device And An Apparatus And Method For Applying The Device Into A Virtual World (US 2012/0133581 A1)
- [12] Method And System For Creating Model Data (US 2012/0078590 A1)
- [13] Method And System For Protecting Model Data (US 2012/0054873 A1)
- [14] Workpiece Detecting Method and System, 2012, patent approval pending.

TALKS AND PRESENTATIONS

- “Reconstructing full neuron morphology from terabyte-scale images using Vaa3D-VR”. NRA 2018 invited talk, Nanjing, China, September 2018.
- “High-Throughput Generation of Full Neuron Morphometry from Peta-Scale Images”. MICS 2018 invited talk, Nanjing, China, July 2018.
- “Periodic T-spline surface representation and approximation for virtual reality applications”. ISAGA 2009, Singapore, June 2009.
- “Edge based mesh parameterization”. VRCAI 2008, Singapore, December 2008.
- “Adaptive T-spline surface approximation for triangular meshes”. ICICS 2007, Singapore, December 2007.
- “Control points removal for T-splines”. GMP 2006, Pittsburgh, PA, United States, July 2006.

HONORS AND AWARDS

- IBM 4th Invention Plateau, 2012
- IBM 3rd Invention Plateau, 2011
- IBM 2nd Invention Plateau, 2011
- IBM 1st Invention Plateau, 2010
- IBM Tier 2 Award, 2010
- Postgraduate Student Fellowship, Nanyang Technological University
- Teaching Assistant Grant, Nanyang Technological University, 2007 & 2008
- The People’s Scholarship, Fudan University, 2000 & 2001
- Scholarship of Exceptional Freshman, Fudan University, 1999
- China Biology Olympiad, Second Prize, 1998
- Shanghai High School Biology Competition, First Prize, 1998 & 1999

COMPUTER SKILLS

- Programming: C, C++, Java, Pascal, C#, Assembly Language, and others
- Toolkits and Libraries: OpenGL, GLUT, GLUI, Qt, FLTK, CGAL, OpenMesh, and others
- Operating Systems: Microsoft Windows, Linux, and other UNIX variants
- Applications: L^AT_EX, Microsoft Office, Mathematica, Maple, Autodesk Maya, Autodesk 3ds Max, Rhinoceros 3D, and other common softwares

LANGUAGE SKILLS

- English: fluent
- Mandarin: native

MATHEMATICAL
EXPERTISE

- Mathematical analysis
- Linear algebra
- Abstract algebra
- Graph theory
- Probability, Random variables, and Stochastic processes
- Differential geometry

REFERENCES

Available upon request.

Last updated: July 30, 2019
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