
Liang Wang

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Education

Ph.D. in Computer Science Aug, 2004-Present
Department of Computer Science, University of Kentucky
Advisor: Dr. Ruigang Yang

B.S. in Computer Science Sept, 2000-July, 2004
School of Computer Science and Engineering, Beihang University, China

Research Interests

Computer vision and computer graphics, especially on stereo matching, sensor fusion, 3D reconstruction, structure from motion, image-based modeling, image completion, and multi-projector display

Publication

• Journal Articles

Spatial-Temporal Fusion for High Accuracy Depth Maps using Dynamic MRFs

Jiejie Zhu, [Liang Wang](#), Jizhou Gao, and Ruigang Yang

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Vol. 32, No. 5, Page 899-909, May 2010

Stereo Matching with Color-Weighted Correlation, Hierarchical Belief Propagation and Occlusion Handling

Qingxiong Yang, [Liang Wang](#), Ruigang Yang, Henrik Stew énius, and David Nister

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Vol. 31, No. 3, Page 492-504, March 2009

Detailed Real-Time Urban 3D Reconstruction from Video

M. Pollefeys, D. Nist é, J.-M. Frahm, A. Akbarzadeh, P. Mordohai, B. Clipp, C. Engels, D. Gallup, S.-J. Kim, P. Merrell, C. Salmi, S. Sinha, B. Talton, [L. Wang](#), Q. Yang, H. Stew énius, R. Yang, G. Welch, H. Towles

International Journal of Computer Vision (IJCV), Volume 78, Issue 2 (July 2008), Pages: 143 - 167

BRDF Invariant Stereo using Light Transport Constancy

[Liang Wang](#), Ruigang Yang, and James E. Davis

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), September 2007, Vol. 29, No. 9,
Pages: 1616-1626

A Performance Study on Different Cost Aggregation Approaches used in Real-time Stereo Matching

Minglun Gong, Ruigang Yang, [Liang Wang](#), and Mingwei Gong

International Journal of Computer Vision (IJCV), Volume 75, Issue 2 (November 2007), Pages: 283 - 296

View-Dependent Textured Splatting

Ruigang Yang, David Guinnip, and [Liang Wang](#)

The Visual Computer 22(7): 456-467 2006

• **Conference and Workshop Papers**

A Constant-Space Belief Propagation Algorithm for Stereo Matching

Qingxiong Yang, [Liang Wang](#), and Narendra Ahuja

IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2010

TofCut: Towards Robust Real-Time Foreground Extraction Using a Time-of-Flight Camera

[Liang Wang](#), Chenxi Zhang, Ruigang Yang, and Cha Zhang

Fifth International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2010
(Oral)

Real-Time Video Matting using Multichannel Poisson Equations

Minglun Gong, [Liang Wang](#), Ruigang Yang, and Yee-Hong Yang

Graphics Interface, 2010 (oral)

Search Space Reduction for MRF Stereo

[Liang Wang](#), Hailin Jin, and Ruigang Yang

European Conference on Computer Vision (ECCV), 2008

Stereoscopic Inpainting: Joint Color and Depth Completion from Stereo Images

[Liang Wang](#), Hailin Jin, Ruigang Yang, and Minglun Gong

IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2008

Fusion of Time-of-Flight Depth and Stereo for High Accuracy Depth Maps

Jiejie Zhu, [Liang Wang](#), Ruigang Yang, and James E. Davis

IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2008
(Oral)

Multi-Projector Display with Continuous Self-Calibration

Jin Zhou, [Liang Wang](#), Amir Akbarzadeh, and Ruigang Yang

ACM/IEEE International Workshop on Projector-Camera Systems (PROCAMS), 2008 (**Best Paper Award**)

Real-Time Visibility-Based Fusion of Depth Maps

P. Merrell, A. Akbarzadeh, [L. Wang](#), P. Mordohai, J-M. Frahm, R. Yang, D. Nister, and M. Pollefeys
IEEE International Conference on Computer Vision (ICCV), 2007 (Oral)

Light Fall-off Stereo

Miao Liao, [Liang Wang](#), Ruigang Yang, and Minglun Gong
IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2007

High Quality Real-time Stereo using Adaptive Cost Aggregation and Dynamic Programming

[Liang Wang](#), Miao Liao, Minglun Gong, Ruigang Yang, and David Nister
Third International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2006 (Oral)

How Far Can We Go with Local Optimization in Real-Time Stereo Matching

[Liang Wang](#), Mingwei Gong, Minglun Gong, and Ruigang Yang
Third International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2006

Towards Urban 3D Reconstruction from Video

A. Akbarzadeh, J.-M. Frahm, P. Mordohai, B. Clipp, C. Engels, D. Gallup, P. Merrell, M. Phelps, S. Sinha, B. Talton, [L. Wang](#), Q. Yang, H. Stewenius, R. Yang, G. Welch, H. Towles, D. Nister and M. Pollefeys
Third International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2006

Real-time Global Stereo Matching using Hierarchical Belief Propagation

Qingxiong Yang, [Liang Wang](#), Ruigang Yang, Shengnan Wang, Miao Liao, and David Nister
The British Machine Vision Conference (BMVC), 2006

Stereo Matching with Color-weighted Correlation, Hierarchical Belief Propagation and Occlusion Handling

Qingxiong Yang, [Liang Wang](#), Ruigang Yang, Henrik Stewenius, and David Nister
IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2006

BRDF Invariant Stereo using Light Transport Constancy

James E. Davis, Ruigang Yang, and [Liang Wang](#)
IEEE International Conference on Computer Vision (ICCV), 2005 (Oral)

Honors and Awards

VLPR' 09 Travel Fellowship, Summer School in Vision, Learning, and Pattern Recognition, 2009

Best Paper Award, International Workshop on Projector-Camera Systems, 2008

Thaddeus B. Curtz Memorial Scholarship Award, University of Kentucky, 2007

NSF Student Travel Grant, 3DPVT, 2006

Various scholarships for outstanding students, Beihang University, 2000-2004

Internships and Research Experience

Summer Internship at Advanced Technology Labs, Adobe Systems Incorporated,
May 19th-Aug 15th, 2008

Mentor: Dr. Hailin Jin, Project: Intelligent Scene Modeling from Photographs

Summer Internship at Advanced Technology Labs, Adobe Systems Incorporated,
May 14th-Aug 19th, 2007

Mentor: Dr. Hailin Jin, Project: Interactive Stereo

Research Assistant, Center for Visualization and Virtual Environment,
University of Kentucky, Aug, 2004-Present

Professional Activities

Student Member of IEEE

Reviewer IEEE Conference on Computer Vision and Pattern Recognition 2007, 2008, 2009, 2010

Reviewer IEEE International Conference on Computer Vision 2009

Reviewer SIGGRAPH Asia 2010

Reviewer IEEE Transactions on Pattern Analysis and Machine Intelligence

Reviewer IEEE Transactions on Circuits and Systems for Video Technology

Reviewer Computer Vision and Image Understanding

Reviewer Machine Vision and Applications