

# Zhan Yu

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CONTACT INFORMATION	Biren Technology USA, San Jose Biren Technology TBD (Office) 2870 Zanker Road, STE 240, San Jose CA 95134	<i>Phone:</i> +1-302-740-3485 <i>E-mail:</i> yshmzhan@gmail.com Personal Webpage
RESEARCH INTERESTS	Computer Graphics, Computational Photography, and Computer Vision.	
EDUCATION	<b>University of Delaware</b> , Newark, DE 19716, USA  Ph.D., Computer Science, August 2010 - December 2013 <ul style="list-style-type: none"><li>• Dissertation Topic: <i>Improving The Spatial, Angular, and Temporal Resolution in Light Field Imaging</i></li><li>• Adviser: Dr. Jingyi Yu</li></ul> <b>Xiamen University</b> , Xiamen, Fujian 361005, P.R. China  B.S., Software Engineering, September 2004 - July 2008	
PROFESSIONAL EXPERIENCE	<b>Sr. Principal Engineer</b> November 2021 to present <ul style="list-style-type: none"><li>– Architecting cloud native graphics framework for upcoming Biren GPUs. Biren Technology, 2870 Zanker Road, STE 240, San Jose CA 95134</li></ul> <b>Principal Engineer</b> November 2020 to November 2021 <ul style="list-style-type: none"><li>– Architecting next generation graphics framework. Oppo USA (Innopeak Technology), 2479 E Bayshore Rd #110, Palo Alto, CA 94303</li></ul> <b>Principal Graphics Architect</b> February 2019 to November 2020 <ul style="list-style-type: none"><li>– Architecting next generation graphics and image processing framework of Harmony OS. Huawei USA, 2330 Central Expy, Santa Clara, CA 95050</li></ul> <b>Sr. Computer Scientist Lead</b> November 2015 to February 2019 <ul style="list-style-type: none"><li>– Revolutionize Photoshop’s core compositing pipeline. Adobe Photoshop Group, Adobe Systems Incorporated, San Jose, CA 95110, USA,</li></ul> <b>Research Scientist</b> December 2013 to November 2015 <ul style="list-style-type: none"><li>– Architect of Photoshop Mix and its framework. Adobe Photoshop Group, Adobe Systems Incorporated, San Jose, CA 95110, USA,</li></ul>	

**Research Intern** June 2013 to September 2013

Adobe Photoshop Group,

Adobe Systems Incorporated, San Jose, CA 95110, USA,

- Designing and implementing light field imaging algorithms for Mac.
- ★ *Implementing GPU based light field rendering, fourier slice photography, and depth based light field rendering on Mac*
- Mentor : Jeff (Jenchan) Chien and Dr. Todor Georgiev

**Research Intern** June 2012 to September 2012

Qualcomm QCT Group,

Qualcomm, San Diego, CA 92121, USA,

- Designing algorithms for a mobile plenoptic camera.
- ★ *Research on “Lytro” light field camera and technology, as well as other light field camera models such as the “focused plenoptic camera” model.*
- Mentor : Dr. Todor Georgiev

**Research Intern** June 2011 to September 2011

Adobe Photoshop Group,

Adobe Systems Incorporated, San Jose, CA 95110, USA,

- Rendering artifact free images with Light Field data captured by Plenoptic Camera 2.0.
- ★ *Implemented “Plenoptishop” software for various light field applications such as calibration, refocusing, depth estimation, anti-aliasing, HDR, and dynamic polarization.*
- Mentor : Dr. Todor Georgiev
- Manager : Michelle Shali Qi

**Research Assistant** August 2010 to Dec 2013

Department of Computer and Information Sciences,

University of Delaware, Newark, DE 19716, USA

- Light Field Rendering, Stereo Matching, and Image Based Modeling
- Supervisor : Dr. Jingyi Yu

**Research Assistant** September 2008 to June 2010

Department of Computer Science and Information Engineering,

Inha University, Incheon 402-751, Korea

- Pattern Recognition
- Supervisor : Dr. Phill Kyu Rhee

TEACHING  
EXPERIENCE

**Teaching Assistant** Spring 2011 and Spring 2013

Department of Computer and Information Sciences,

University of Delaware, Newark, DE 19716, USA

- CISC 640: Computer Graphics
- Professor : Dr. Jingyi Yu

SELECTED  
CONFERENCE  
PUBLICATIONS

Yang Yang, Haiting Lin, **Zhan Yu**, Sylvain Paris, and Jingyi Yu. *Virtual DSLR: High Quality Dynamic Depth-of-Field Synthesis on Mobile Platforms*. In Electronic Imaging, Digital Photography and Mobile Imaging XII 2016 [Best Student Paper Award]

**Zhan Yu**, Yang Yang, Sylvain Paris, and Jeff Chien. *Dynamic Depth of Field Synthesis on Mobile Photography using RGBD Data*. in Adobe Tech Summit 2015.

Xinqing Guo, Haiting Lin, **Zhan Yu**, and Scott McCloskey. *Barcode Imaging using a Light Field Camera..* In Proceedings of European Conference on Computer Vision (ECCV) Workshop on Light Fields for Computer Vision (LF4CV) 2014.

Can Chen, Haiting Lin, **Zhan Yu**, Sing Bing Kang, and Jingyi Yu. *Light Field Stereo Matching Using Bilateral Statistics of Surface Cameras*. In Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) 2014.

Xuan Yu, **Zhan Yu**, Xiaogang Chen, and Jingyi Yu. *A Hybrid Image-CAD Based System for Modeling Realistic Hairstyles*. In Proceedings of ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D) 2014.

Xinqing Guo, Jin Sun, **Zhan Yu**, Haibin Ling, and Jingyi Yu. *Mobile Multi-Flash Photography*. In Proceedings of SPIE conference of Digital Photography X 2014.

Qiaosong Wang, **Zhan Yu**, Christopher Rasmussen, and Jingyi Yu. *Stereo Vision based Depth of Field Rendering on a Mobile Device*. In Proceedings of SPIE conference of Digital Photography X 2014 [Best Student Paper Award].

Yang Yang, Xinqing Guo, **Zhan Yu**, and Jingyi Yu. *An Immersive Surgery Training System With Live Streaming Capability*. In Proceedings of Medical Meets Virtual Reality Conference (MMVR) 2014.

**Zhan Yu**, Xinqing Guo, Haibin Ling, Andrew Lumsdaine, and Jingyi Yu. *Line-Assisted Light Field Triangulation and Stereo Matching*. In Proceedings of the Thirteenth International Conference on Computer Vision (ICCV), 2013

**Zhan Yu**, Jingyi Yu, Andrew Lumsdaine, and Todor Georgiev. *Plenoptic Depth Map in the Case of Occlusions*. In Proceedings of SPIE 8667, Multimedia Content and Mobile Devices, 86671S (March 7, 2013); doi:10.1117/12.2005847

Todor Georgiev, **Zhan Yu**, Andrew Lumsdaine, and Sergio Goma. *Lytro Camera Technology: Theory, Algorithms, Performance Analysis*. In Proceedings of SPIE 8667, Multimedia Content and Mobile Devices, 86671J (March 7, 2013); doi:10.1117/12.2013581

Xinqing Guo, David Lopez, **Zhan Yu** and Jingyi Yu. *A Portable Immersive Surgery Training System using RGB-D Sensors*. In Proceedings of Medical Meets Virtual Reality Conference (MMVR) 2013.

**Zhan Yu**, Jingyi Yu, Andrew Lumsdaine, and Todor Georgiev. *An Analysis of Color Demosaicing in Plenoptic Cameras*. In Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) 2012.

**Zhan Yu**, Christopher Thorpe, Xuan Yu, Scott Grauer-Gray, Feng Li, and Jingyi Yu. *Dynamic Depth of Field on Live Video Streams: A Stereo Solution*. In Proceedings of Computer Graphics International (CGI) 2011.

**Zhan Yu**, Mi Young Nam, and Phill Kyu Rhee. *Online Evolutionary Context-Aware Classifier Ensemble Framework for Object Recognition*. In Proceedings of IEEE International Conference on Systems, Man, and Cybernetics (SMC) 2009.

Mi Young Nam, **Zhan Yu**, and Phill Kyu Rhee. *Facial Landmark Detection System using Interest-region Model and Edge Energy Function*. In Proceedings of IEEE International Conference on Systems, Man, and Cybernetics (SMC) 2009.

SELECTED  
JOURNAL  
PUBLICATIONS

Xinqing Guo, **Zhan Yu**, Sing Bing Kang, Haiting Lin, and Jingyi Yu. *Enhancing Light Fields through Ray-Space Stitching*. in Proceedings of IEEE Trans. on Visualization and Computer Graphics (TVCG) 2015.

Qiaosong Wang, **Zhan Yu**, Christopher Rasmussen, and Jingyi Yu. *Stereo Vision based Depth of Field Rendering on a Mobile Device*. In Journal of Electronic Imaging (JEI) 23 (2), 023009 (March 19, 2014); doi: 10.1117/1.JEI.23.2.023009.

**Zhan Yu**, Xuan Yu, Christopher Thorpe, Scott Grauer-Gray, Feng Li, and Jingyi Yu. *Racking Focus and Tracking Focus on Live Video Streams: A Stereo Solution*. In The Visual Computer Journal (TVCJ), February 2014, Volume 30, Issue 1, pp 45-58

Christopher Thorpe, Feng Li, Zijia Li, **Zhan Yu**, David Saunders, and Jingyi Yu. *A Co-Prime Blur Scheme for Data Security in Video Surveillance*. To appear in IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2013

**Zhan Yu**, Mi Young Nam, Suman Sedai, and Phill Kyu Rhee. *Evolutionary Fusion of a Multi-Classifer System for Efficient Face Recognition*. In the International Journal of Control, Automation, and Systems (IJCAS). 2009. vol. 7, no. 1, pp.33-40

PROFESSIONAL  
ACTIVITIES

Program Committee of Conferences:

- Internation Conference on Computational Photography
- SPIE Conference of Digital Photography
- SPIE Conference of Digital Photography and Mobile Imaging
- International Conference on Computer Vision and Image Analysis
- World Symposium on Computer Applications and Research

Reviewers for Journals and Conferences:

- Journal of Machine Vision and Applications
- The Visual Computer Journal
- SPIE Journal of Electronic Imaging
- IEEE Transactions on Circuits and Systems for Video Technology
- The 4th International Conference on Electronics, Communications and Networks
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Image Processing (TIP)

PATENTS AND  
SOFTWARE  
LICENCES

US Patents:

- **Zhan Yu**, Yumin Jia, Haiting Lin, and Jinoh Oh *Parallel Rendering Engine. P7987-US filed*
- **Zhan Yu** *Fast Dynamic Depth of Field Synthesis using Ray Tracing Approximation. US Patent 9,905,041*
- Todor Georgiev, and **Zhan Yu**. *Methods and apparatus for generating plenoptic depth maps. US Patent 9,390,505*
- Jingyi Yu, Xinqing Guo, and **Zhan Yu**. *3D Light Field Camera and Photography Method. U.S. Application No. 15/107,661*

Software Licence Submitted:

- Jingyi Yu, and **Zhan Yu**. *Light Field Quilting.*

RESEARCH  
PROJECTS

**Light Field Imaging** (Ph.D. Dissertation Topic) August 2010 to Present  
Sponsor: Computer Graphics and Imaging Lab, University of Delaware  
*Responsibilities: Improving the spatial, angular and temporal resolution of light field imaging.*

Photoshop Light Field Plugin June 2013 to September 2013  
Sponsors: Adobe Systems Incorporated  
*Responsibilities: Designing algorithms and implemented GPU light field rendering, GPU light field depth estimation and reconstruction, and GPU Fourier Slice Photography for Adobe Photoshop.*

IR Face Detection Project January 2013 to June 2013  
Sponsors: U.S. Army Research Laboratory  
*Responsibilities: Designing infrared face detection algorithms.*

Plenoptic Camera Project June 2012 to September 2012  
Sponsors: Qualcomm  
*Responsibilities: Designing algorithms and implementing software for a mobile plenoptic camera.*

Plenoptic Camera Project June 2011 to September 2011  
Sponsors: Adobe Systems Incorporated  
*Responsibilities: Designing algorithms and implementing software to render artifact free Light Field Images based on Computational Photography, Computer Vision and Computer Graphics.*

Korean Airlines Perimeter Protection System September 2008 to December 2009  
Sponsors: General Electric Company, Korean Air Lines Co., Ltd.  
*Responsibilities: Designing the classification module for common and uncommon events in the airport based on context aware trajectory learning.*

Samsung Visual Mouse System July 2008 to July 2009  
Sponsors: Samsung Group  
*Responsibilities: Designing and implementing the system for iris localization and tracking based on hierarchical Haar feature classifier on the PC and ported it to the Samsung test board.*

EXPERTISE

Computer Science and Engineering:

- Computer Graphics, Computer Vision, Computational Photography, Image Processing, Pattern Recognition and Machine Learning, and Video Game Development

Software Engineering

- Object Oriented Software Engineering, Requirement Analysis, and Software Testing

HARDWARE AND  
SOFTWARE SKILLS

Computer Programming:

- C, C++, Obj-C, MetalSL, HLSL, GLSL, Java, C#, HTML/CSS, Matlab

Embedded and Real-time Systems:

- Windows CE, Apple iOS

Interfaces and Architectures:

- DirectX 9-12, Metal, OpenGL/Vulkan, CUDA, Windows API, Microsoft .NET 1.0-4.0

Operating Systems:

- Microsoft Windows 3.1-10, Apple OS X

REFERENCES  
AVAILABLE TO  
CONTACT

**Dr. Jingyi Yu** (e-mail:yu@eecis.udel.edu; phone: +1-302-831-0345)

- Professor, Department of Computer and Information Sciences,  
University of Delaware
- ◇ 410 Smith Hall, University of Delaware, Newark, DE 19716, USA
- ★ *Dr. Yu was my Ph.D. adviser.*

**Dr. Todor Georgiev** (e-mail:todorg@qti.qualcomm.com; phone: +1-408-990-4997)

- Principal Engineer, QCT Group,  
Qualcomm Incorporated
- ◇ 2581 Junction Ave, San Jose, CA, USA
- ★ *Dr. Georgiev was my mentor in Qualcomm QCT Group and Adobe Photoshop Group.*

**Jeff (Jenchan) Chien** (e-mail:jchien@adobe.com; phone: +1-408-536-4703)

- Sr. Principal Scientist, Adobe Photoshop Group,  
Adobe Systems Incorporated
- ◇ W10-606, 345 Park Avenue, San Jose, CA, USA
- ★ *Jeff Chien is my supervisor in Adobe Photoshop Group.*

**Michelle (Shali) Qi** (e-mail:mqi@adobe.com; phone: +1-408-536-6346)

- Quality Engineering Manager, Adobe Photoshop Group,  
Adobe Systems Incorporated
- ◇ W10-606, 345 Park Avenue, San Jose, CA, USA
- ★ *Mrs. Qi was my manager in Adobe Photoshop Group.*

\* More references available upon requests.