Feng Zheng, Ph.D.

Curriculum Vitae, September 17, 2015

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SPECIALITIES

- **Augmented Reality:** Optical and Video See-Through AR, Projector-Based Spatial AR
- **Computer Vision:** SLAM, 3D Tracking, Optical Flow, Calibration
- **Computer Graphics:** Real-Virtual Coherent Rendering, Natural Interaction
- **Programming:** C/C++, OpenCV, CUDA, Embedded, Matlab, OpenGL, GLSL, Win/Linux/Mac, Git

EDUCATION

Ph.D., Comptuer Science   9/2010 – 3/2015
The University of North Carolina at Chapel Hill (UNC-CH), NC, USA
Dissertation: Spatio-Temporal Registration in Augmented Reality. Advisor: Prof. Greg Welch.

B.E., Software Engineering   9/2006 – 6/2010
Beijing Institute of Technology (BIT), Beijing, China
GPA: 3.8/4.0. Rank: 2/79.

WORK EXPERIENCE

Senior Software Engineer, Magic Leap, Inc., Dania Beach, FL   3/2015 – Present
- Working on Computer Vision, Augmented Reality, and embedded development.

Research Intern, Microsoft Research, Redmond, WA   6/2014 – 9/2014
Natural Interaction Group. Mentors: Dr. Hrvoje Benko, Dr. Eyal Ofek and Dr. Andy Wilson.
- Conducted novel research on combining Optical See-Through AR and Spatial AR, and generated a provisional patent.

Research Intern, Bosch Research, Palo Alto, CA   5/2013 – 8/2013
Visual Computing Group. Mentors: Dr. Liu Ren and Dr. Yu Sheng.
- Developed a complete framework for real-time head-worn stereo Optical See-Through AR, including eye-tracker-display calibration, scale-aware PTAM tracking, and scene authoring.

RESERACH EXPERIENCE

Research Assistant, UNC-CH   9/2010 – 5/2014
Department of Computer Science. Supervisors: Prof. Greg Welch and Prof. Henry Fuchs.
- Invented a novel algorithm for minimizing latency in Optical See-Through AR displays, achieving 78-fold speedup, and generated a provisional patent.
- Developed new approaches for closed-loop real-virtual registration in both Video See-Through AR (with pixel-wise accuracy and robustness to error sources) and projector-based Spatial AR.

Research Intern, Chinese Academy of Sciences   10/2009 – 4/2010
Center for Biometrics and Security Research. Mentor: Prof. Stan Z. Li.
- Developed an accurate model-based single-view face reconstruction method.

SELECTED AWARDS AND HONORS

1. Dissertation Completion Fellowship, UNC-CH, USA, Apr 2014.
2. ISMAR Doctoral Consortium Award, USA, Nov 2012.
3. Outstanding Graduate Award, BIT, China, Jul 2010.
4. First Prize, National Challenge Cup, China, Nov 2009. (*the Chinese Olympics of Sci&Tech*)
5. Outstanding Winner, Capital Challenge Cup, Beijing, China, Jun 2009.
6. CASIC (China Aerospace Science & Industry Corp.) Fellowship, BIT, China, Oct 2009.
7. Microsoft Innovative Team Fellowship, BIT, China, Jul 2009.
8. Second Prize, Microsoft Imagine Cup, China, May 2009.
9. Second Prize, Mathematical Contest in Modeling (MCM), USA, Feb 2009.
10. Second Prize, Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM), China, Sept 2008.
11. National Fellowship, China, Oct 2007. (*the most prestigious fellowship in China*)
12. Outstanding Student Fellowship, School of Software, BIT, China, 2006 – 2010.

ACADEMIC SERVICES

- Session chair, ISMAR 2015, Fukuoka, Japan, Sept 29 - Oct 3, 2015.
- Reviewer for conferences ACMMM 2015, ISMAR 2015/2014, SIGGRAPH Asia 2014, VR 2014, 3DUI 2014, and journals TVCG, Presence, and JCGT.
- Invited attendee, "Taking AR to the Next Level", Graz, Austria, Sept 15-17, 2014.
- Student volunteer, VR 2013, Orlando, FL, USA, Mar 16-23, 2013.

PUBLICATIONS

1. Hrvoje Benko, Eyal Ofek, **Feng Zheng** and Andrew D. Wilson. FoveAR: Combining an Optically See-Through Near-Eye Display with Spatial Augmented Reality Projections. Proc. 2015 ACM Symposium on User Interface Software and Technology (UIST), Charlotte, NC, USA, Nov 2015.
2. **Feng Zheng**, Dieter Schmalstieg, and Greg Welch. Pixel-Wise Closed-Loop Registration in Video-based Augmented Reality. Proc. 2014 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Munich, Germany, Sept 2014.
3. **Feng Zheng**, Turner Whitted, Anselmo Lastra, Peter Lincoln, Andrei State, Andrew Maimone and Henry Fuchs. Minimizing Latency for Augmented Reality Displays: Frames Considered Harmful. Proc. 2014 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Munich, Germany, Sept 2014.
4. **Feng Zheng**, Ryan Schubert and Greg Welch. A General Approach for Closed-Loop Registration in AR. Proc. IEEE Virtual Reality 2013, Orlando, FL, USA, Mar 2013. (*Best Short Paper Nominee*)
5. **Feng Zheng** and Hongsong Li. ARCrowd - A Tangible Interface for Interactive Crowd Simulation. Proc. 16th International Conference on Intelligent User Interfaces (IUI), Palo Alto, CA, USA, Feb 2011.
6. **Feng Zheng**, Hongsong Li, Gangyi Ding, Zhangtao Huang, Changlu Zhang and Longfei Zhang. A Crowd Control and Simulation System based on Augmented Reality. Journal of System Simulation, 2009-S1.