

# Andrew Maimone



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## Research Interests

Near-eye displays, 3D displays, 3D scene acquisition, computer graphics, computer vision, virtual and augmented reality

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## Education

- May 2015 (expected) **Doctor of Philosophy**, University of North Carolina at Chapel Hill, Chapel Hill, NC USA  
Computer Science. Advisor: Prof. Henry Fuchs.
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- May 2012 **Master of Science**, University of North Carolina at Chapel Hill, Chapel Hill, NC USA  
Computer Science.
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- Nov 2006 **Bachelor of Science**, Rochester Institute of Technology, Rochester, NY USA  
Computer Science.

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## Selected Publications

- 2015 **Maimone, A.** *Computational See-Through Near-Eye Displays*. PhD Dissertation, University of North Carolina at Chapel Hill, Department of Computer Science, defended on April 8, 2015. Committee: Henry Fuchs (advisor), Gary Bishop, Jan-Michael Frahm, Douglas Lanman, David Luebke
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- 2014 **Maimone, A.**, Lanman D., Rathinavel, K., Keller, K., Luebke, D., and Fuchs, H. *Pinlight Displays: Wide Field of View Augmented Reality Eyeglasses Using Defocused Point Light Sources*. SIGGRAPH 2014 (Vancouver, Canada, August 10-14, 2014)
- Maimone, A.**, Chen, R., Fuchs, H., Raskar, R., and Wetzstein, G. *Wide Field of View Compressive Light Field Display using a Multilayer Architecture and Tracked Viewers*. SID Display Week 2014 (San Diego, CA, USA, June 1-6, 2014)
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- 2013 **Maimone, A.** and H. Fuchs. *Computational Augmented Reality Eyeglasses*. The IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2013 (Adelaide, Australia, October 1-4, 2013)
- Maimone, A.**, Wetzstein, G., Hirsch, M., Lanman, D., Raskar, R., and Fuchs, H. 2013. *Focus 3D: Compressive Accommodation Display*. ACM Trans. Graph. 32, 5. Article 153 (September 2013).
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- Maimone, A.**, Yang, X., Dierk, N., State, A., Dou, M., and Fuchs, H. *General-Purpose Telepresence with Head-Worn Optical See-Through Displays and Projector-Based Lighting*. IEEE Virtual Reality 2013 (Orlando, FL, USA, March 16-23, 2013) **Award: Best short paper**
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- 2012 **Maimone, A.** and H. Fuchs. *Reducing Interference Between Multiple Structured Light Depth Sensors Using Motion*. IEEE Virtual Reality 2012 (Orange County, CA, USA, March 4-8, 2012) **Award: Best short paper**
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- 2011 **Maimone, A.** and H. Fuchs. *Encumbrance-free Telepresence System with Real-time 3D Capture and Display using Commodity Depth Cameras*. The IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2011 (Basel, Switzerland, October 26-29, 2011)
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### **Other Publications**

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- 2015 **Maimone, A.**, and Fuchs, H. *High Efficiency Light Field Display*. 2015 GPU Technology Conference Posters (San Jose, CA, Mar. 17-20, 2015)
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- 2014 Zheng, F., Whitted, T., Lastra, A., Lincoln, P., State, A., **Maimone, A.**, and Fuchs, H. *Minimizing Latency for Augmented Reality Displays: Frames Considered Harmful ISMAR 2014 (Munich, Germany, Sept. 10-12, 2014)*
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- 2012 **Maimone, A.** and H. Fuchs. *Real-Time Volumetric 3D Capture of Room-Sized Scenes for Telepresence*. 3DTV Conference: The True Vision - Capture, Transmission and Display of 3D Video (3DTV-CON) 2012 (Zurich, Switzerland, October 15-17, 2012)
- Maimone, A.**, Bidwell, J., Peng, K., and Fuchs, H. *Enhanced Personal Autostereoscopic Telepresence System using Commodity Depth Cameras.*, Computers & Graphics, Volume 36, Issue 7, November 2012, Pages 791-807
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- 2011 **Maimone, A.** and H. Fuchs. *A First Look at a Telepresence System with Room-Sized Real-Time 3D Capture and Large Tracked Display*. The 21st International Conference on Artificial Reality and Telexistence (ICAT) (Osaka, Japan, November 28-30, 2011)
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### **Invited Talks**

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- Aug. 18, 2014 **"Computational Display Designs for Augmented Reality Glasses"**  
*Microsoft Research, Redmond, WA*
- Aug. 19, 2014 **"Pinlight Displays: A Computational Display Design for Augmented Reality Glasses"**  
*Oculus VR R&D, Redmond, WA*
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## **Exhibitions**

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- Aug. 10, 2014- “**Pinlight Displays**”  
Aug. 14, 2014 Slim, wide field of view, see-through augmented reality glasses were demonstrated  
*Siggraph 2014 Emerging Technologies, Vancouver, BC Canada*

## **Research and Professional Experience**

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- Aug 2010 – **University of North Carolina at Chapel Hill**, Chapel Hill, NC  
Present Research Assistant, BeingThere Centre Research Group  
*Advisor: Prof. Henry Fuchs*
- Research on near-eye displays, 3D displays, 3D acquisition and telepresence systems
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- May 2013 – **NVIDIA Research**, Santa Clara, CA  
Aug 2013, Intern/Contractor, New Experiences Group  
May 2014 –  
Feb 2015 Research on near-eye displays
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- Mar 2012 – **MIT Media Lab**, Cambridge, MA  
May 2012 Visiting Student, Camera Culture Group  
*Advisors: Prof. Ramesh Raskar*  
*Collaborators: Dr. Douglas Lanman, Dr. Gordon Wetzstein, Matthew Hirsch*
- Research on compressive displays
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- Jan 2006 – **Boeing Space and Intelligence Systems**, El Segundo, CA  
July 2010 Software Engineer, Ground Systems (Jan 2007 – July 2010)  
Intern, Ground Systems (Jan 2006 – Aug 2006)
- Software development in databases, graphics, programming languages, automated requirements validation, and user interfaces to support satellite ground systems.
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- Jun 2004 – **Atmospheric Sciences Research Center**, Wilmington, NY  
Aug 2004 Intern, Whiteface Mountain Field Station  
*Advisor: Dr. Utpal K. Roychowdhury*
- Developed data analysis tools for an atmospheric sciences researcher.

## **Awards**

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- 2014 Student Inventor of the Year. University of North Carolina Computer Science Department
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- 2013 Best Short Paper: *General-Purpose Telepresence with Head-Worn Optical See-Through Displays and Projector-Based Lighting*, IEEE Virtual Reality 2013
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- 2012 Best Short Paper: *Reducing Interference Between Multiple Structured Light Depth Sensors Using Motion*, IEEE Virtual Reality 2012
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### ***Funding and Scholarships***

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2014-2015 NVIDIA Graduate Fellowship, Amount: \$25,000

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2013-2016 NSF Grant "Eyeglass-Style Multi-Layer Optical See-Through Displays for Augmented Reality", PI: Prof. Henry Fuchs, Award #1319567, Amount: \$499,997

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2010-2014 UNC CS Department Five Year Research Assistantship, Amount: \$27,000/yr

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### ***Professional Service***

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*Program  
Committee* ISMAR 2014, IEEE VR 2014

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*Conference  
& Journal  
Reviewer* ISMAR 2015, TVCG 2015, 3DUI 2015, CHI 2015, IEEE VR 2015, ICAT-EGVE 2014, UIST 2014, IROS 2014, IEEE TVCG 2013, 3DUI 2013, IEEE VR 2013, VRCAI 2012, JVRC 2012, ISMAR 2012, UIST 2012, CGI 2012, Siggraph Asia 2011

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