CURRICULUM VITAE
Hong Hua
Associate Professor of Optical Sciences, University of Arizona
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Contact Information

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Fields of Major Research Interests

3D displays and optical imaging (i.e. optical system design, instrumentation, and objective assessment of 3D display and imaging technologies); **human-computer interface in immersive virtual and augmented environments** (i.e. multi-user, multi-scale heterogeneous display environments to enable collaborative activities, innovative human-computer interface technologies, and usability assessment of interface methods in single- or multi-user environments); and **applications of technologies in medicine, scientific visualization, and education**.

Education

Universities Attended	Department	Degrees	Dates Awarded
Beijing Institute of Technology	Opto-electronic Engineering	Ph.D. with honors	1999
University of Central Florida	School of Optics/CREOL	Visiting student	02/1999-07/1999
Beijing Institute of Technology	Opto-electronic Engineering	B.S.E. with honors	1994

Doctoral Dissertation
- ❖ Title: Techniques of Immersion Enhancement and Interaction for Virtual Reality
- ❖ Advisor: Dr. Yongtian Wang, Professor of Optical Engineering
- ❖ Major Field: Optical Engineering
- ❖ Subfields: 3D displays, augmented reality, virtual reality, human computer interface

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Employment

Associate Professor
- ❖ College of Optical Sciences, University of Arizona, 2009-
- ❖ (Joint) Department of Electrical and Computer Engineering, University of Arizona
- ❖ (Joint) Department of Computer Sciences, University of Arizona

Assistant Professor
- ❖ College of Optical Sciences, University of Arizona, 2004-2009
- ❖ (Joint) Department of Electrical and Computer Engineering, University of Arizona, 2004-2009
- ❖ (Joint) Department of Computer Sciences, University of Arizona, 2004-2009
- ❖ Department of Information and Computer Sciences, University of Hawaii at Mānoa, 01/2003-12/2003

Beckman Research Fellow
- ❖ Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, 12/1999-12/2002

Postdoctoral Research Associate
- ❖ ODAlab, School of Optics/CREOL, University of Central Florida, 08/1999-12/1999

Honors and Awards
Honors
- ❖ Nominated to attend the 2010 EU-US Frontiers of Engineering Symposium by National Academy of Engineering
- ❖ Nominated as UA Researchers @ Leading Edge on 2010 Innovation Day at UA
- ❖ Distinguished Student Paper Award (Co-authored with student) at the 2011 SID International Symposium (Display Week) for the paper "A depth-fused multi-focal-plane display prototype enabling focus cues in stereoscopic displays," 05/2011
- ❖ Best Student Paper Award (co-authored with students) at the 7th IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR'08) for the paper "An optical see-through head-mounted display with addressable focal planes", 09/2008
- ❖ Recipient of National Science Foundation (NSF) CAREER Award, 2007
- ❖ Best Paper Award (Honorable Mention), IEEE Virtual Reality 2003
- ❖ Excellent Ph.D. Dissertation, Beijing Institute of Technology, 07/1999
- ❖ First Prize of Excellent Scientific Papers, Beijing Institute of Technology, 08/1998
- ❖ Excellent B.S.E. Thesis, Beijing Institute of Technology, 07/1994

Scholarships
- ❖ Beckman Fellowship, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, 12/1999-12/2002
- ❖ China Instrument and Control Society Scholarship (~50 awardees selected nation wide), 12/1997 and 12/1994
- ❖ Xu Teli Scholarship (~10 awardees selected at Beijing Institute of Technology), 01/1996
- ❖ Aerospace Long-March Scholarship (~5 awardees selected at Beijing Institute of Technology), 11/1993
- ❖ Ma Shixiu Optical Engineering Scholarship (1 awardee selected in the Department of Opto-electronic Engineering, Beijing Institute of Technology), 12/1992
- ❖ The People's Scholarship of Beijing Institute of Technology (Fist prize, 7 times)

Awards/Scholarship Received by Supervised Students
- ❖ Xinda Hu, SID 2011 Distinguished Student Paper Award
- ❖ Dewen Cheng, SPIE Price/Williams Optical Design and Engineering Scholarship, 2010
- ❖ Rui Zhang, SPIE Scholarships on Optical Science and Engineering, 2009
- ❖ Rui Zhang, Outstanding Graduate Student, College of Optical Sciences, University of Arizona, 2009
- ❖ Dewen Cheng, Optical Research Associates Student Optical Design Award, 07/2009
- ❖ Dewen Cheng, Michael Kidger Memorial Scholarship, 2009
- ❖ Sheng Liu, IEEE and ACM Best Student Paper Award, 2008
- ❖ Craig Pansing, Optical Research Associates Student Optical Design Award, 2005

Teaching
University of Arizona, College of Optical Sciences
- ❖ Courses
  - ▪ Opti471B, Advanced Optics Lab, Spring 2005-date (Undergraduate)
  - ▪ Opti588, Introduction to Display Sciences and Technology, Fall 2006-date (Graduate)
  - ▪ Opti588DL (Distance Learning), Introduction to Display Sciences and Technology, Fall 2011
- ❖ Independent Studies

- Opti599, Undergraduate Independent Study
- Opti499, Undergraduate Independent Study
- Opti492, Undergraduate Directed Research
- CSC599/CSC695, Graduate Independent Study
  ❖ Guest Lectures
    - Opti 563, Photoelectronic imaging devices, Guest lectures (2), Spring 2004
    - Opti 435/535, Visual Optics, Guest lecture (1), Spring 2004, 2005, 2006
    - Opti 400, Radiometry, detectors and sources, Guest lectures (4), Fall 2007

University of Hawaii at Mānoa, Department of Information and Computer Sciences
  ❖ Courses
    - ICS 681: Selected Topics in Computer Graphics, Spring 2003 (Graduate)
    - ICS 481: Introduction to Computer Graphics, Fall 2003 (Undergraduate)
  ❖ Research and Thesis Credits
    - ICS 699: Directed Graduate Research, Summer 2003, Fall 2003

2009 IEEE and ACM International Symposium on Mixed and Augmented Reality
  ❖ Half-day tutorial on "3D display technology: fundamentals and state-of-art technologies", co-taught with Jannick Rolland, Oct. 21st, 2009, Orlando, USA

2000 5th International Conference on Human Interaction with Complex Systems
  ❖ Workshop on Technology of head-mounted displays for 3D visualization and wearable computers (half day), April 30-May 2, 2000, Urbana, Illinois, USA, 05/2000

Advising and Mentoring
Ph.D. Dissertations in Progress
  ❖ Leonard D Brown (08/2004-present), Ph.D. student of Computer Science, passed Comprehensive Exam in Fall 2006, plan to graduate in Spring 2010
  ❖ Xinda Hu (08/2009-present), Ph.D. student of Optical Sciences
  ❖ Jason Kuhn (05/2010-present), Ph.D. student of Optical Sciences
  ❖ Yi Qin (08/2010-present), Ph.D. student of Optical Sciences
  ❖ Sheng-Huei Derek Lu (05/2011-), Ph.D. student of Optical Sciences

Ph.D. Dissertations Directed
  ❖ Sheng Liu (08/2005-08/2010), graduated with Ph.D. in Optical Sciences, "Methods for generating addressable focus cues in stereoscopic displays," University of Arizona
  ❖ Rui Zhang (01/2006-05/2010), graduated with Ph.D. in Optical Sciences, "Development and Assessment of Polarized Head Mounted Projection Displays," University of Arizona
  ❖ Dewen Cheng (08/2007-10/2010), Visiting Ph.D. Student of Optical Sciences, co-supervised with Prof. Yongtian Wang from Beijing Institute of Technology in China

MS Theses/Reports Directed
  ❖ Nickolaos Savidis (08/2007-05/2009), M.S. report, "Application and Effects of Tracking in 3D Visualization," Optical Sciences, University of Arizona, graduated with MS degree in May 2009
  ❖ Glenn Scott Gibb (08/2007-12/2007), M.S. report, "Characteristics, applications, and physics of volumetric three-dimensional displays," Optical Sciences, University of Arizona, graduated with MS degree in December 2007
  ❖ Craig Pansing (02/2004-06/2006), M.S. Thesis, "Optimization of illumination schemes for an eye-tracked head mounted display," Optical Sciences, University of Arizona, graduated with MS degree in June 2006
  ❖ Prasanna Krishnaswamy (02/2004-12/2004), M.S. Thesis, "Design and assessment of improved

feature-based eye tracking methods for head mounted displays," Electrical and Computer Engineering, University of Arizona, graduated with MS degree in December 2004

- ❖ Chunlian Hao (04/2003-12/2003), M.S. Report, "Magnetic tracker calibration for augmented reality," Information and Computer Sciences, University of Hawaii at Mãnoa, graduated with MS degree in December 2003

Undergraduate Research Advising

- ❖ Technical advisor for Senior Capstone Project (ENGR 498) (09/2004-05/2005): supervised the 3DCAM team with 5 senior students (Brian Miller, Diana Walter, David Clark, Curtis Rosenow, and Colan Kennelly)
- ❖ Technical advisor for Senior Capstone Project (ENGR 498) (09/2005-05/2006): supervised the Scatterometer team with 4 senior students (Seth Ginter, James McGovern, Carl Nissly, and Jared Roberts)
- ❖ Supervisor of Undergraduate Directed Research (01/2006-05/2006): Justan Forsyth, senior undergraduate student in the College of Optical Sciences, worked on the project, "Calibration of a panoramic imaging system."
- ❖ Supervisor of Undergraduate Research Assistant (02/2004-10/2004): Minglie Hu, senior undergraduate student in the College of Optical Sciences, worked on the project, "Design and development of a panoramic imaging system."

Other Graduate Advising (other than dissertation or thesis)

- ❖ Prassad Gabbur (09/2005-08/2008), Ph.D. student of Electrical and Computer Engineering
- ❖ Erick Ruiz (02/2004-05/2006): MS student in the College of Optical Sciences, worked on a project "Design and development of a panoramic camera system."
- ❖ Rui Zhang (01/2005-12/2005): graduate student in the Department of Physics, worked on a project titled "Design of a head-mounted display with mutual occlusion capability." He was admitted to the Optical Science program as a PhD student in Spring 2006.
- ❖ John Tamkin (01/2004-05/2005): Ph.D. student in the College of Optical Sciences, worked on his dissertation project titled "Multi-resolution fovea-contingent displays." He passed his dissertation proposal exam on December 17th, 2004. He is currently working with the Optical Research Associates.
- ❖ Yuan Wang (09/2004-06/2005), graduate student in the Department of Electrical and Computer Engineering, worked on a project titled "Development of eyetracking algorithms for an eyetracked head-mounted display."
- ❖ Leonard Brown (06/2003-12/2003): visiting student in the Department of Information and Computer Sciences at the University of Hawaii at Mãnoa, worked on a project titled "Development of tangible magic lens interface in augmented environments." He was admitted to the Computer Science program as a Ph.D. student at the University of Arizona in Fall 2004.

Mentoring

- ❖ Dr. Sangyoon Lee (07/2011-): Research Assistant Professor
- ❖ Dr. Sangyoon Lee (05/2008-07/2011): Post-doctoral Associate
- ❖ Dr. Zhenrong Zheng (06/2009-12/2009), Visiting Scholar
- ❖ Dr. Xiaorui Wang (07/2007-06/2008), Visiting Scholar
- ❖ Dr. Ji-Young Oh (06/2005-11/2007): Post-doctoral Associate

Service / Outreach

National/International General and Editorial Services

- ❖ Joseph Fraunhofer Award/Burley Prize Committee, Optical Society of America, 2011-
- ❖ Proposal Review Panelist, National Science Foundation (NSF), 2003, 2007, 2011
- ❖ Ad-hoc Proposal Reviewer, National Science Foundation, 2008, 2010, 2011

- ❖ Site-visit Review Committee Member, Science of Learning Center, NSF, 11/2005
- ❖ Site-visit Review Committee Member, Science and Technology Center, NSF, 10/2004
- ❖ Ad-hoc Proposal Reviewer, Indiana 21st Century Science and Technology Fund, 2004
- ❖ Permanent Consulting Editor, McGraw-Hill Encyclopedia of Science and Technology, 10/2005-2009
- ❖ Interim Consulting Editor, McGraw-Hill Encyclopedia of Science and Technology, 02/2005-10/2005

Conference/Symposium/Workshop Chair/Host Positions

- ❖ Co-host, Optical Society of America (OSA) 2012 3D Display Technology, Perception, and Application Incubator Meeting
- ❖ Chair, Symposium on The Future of 3-D Display: the Market Place and the Technology, Frontiers in Optics 2009/Laser Science XXV, Optical Society of America (OSA) 2009 Annual Meeting, Oct 11-15, 2009, San Jose, California, USA
- ❖ Workshop Co-chair, 2008 Workshop on Illumination Modeling: Simulation and Perception of Lit and Unlit Objects (IM), Optical Society of America, Rochester, NY, 2008
- ❖ Area Chair, the 6th IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR), 2007
- ❖ Registration Chair, ACM International Symposium on User Interface Software and Technology (UIST), 2004 and 2005
- ❖ Meeting Session Co-chair, SPIE AeroSense 2002: Helmet Mounted Displays, Orlando, FL, 04/2002

Program Committees

- ❖ IEEE Virtual Reality (IEEE VR) Conference Program Committee , 2011-
- ❖ IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR), 2003-present
- ❖ International Conference on Computer Vision and Pattern Recognition (CVPR), 2008-2011
- ❖ International Conference on Computer Vision (ICCV), 2007, 2009
- ❖ SPIE Optical Design and Testing IV (Photonics Asia 2010), SPIE Optical Design and Testing III (2007)
- ❖ ACM Virtual Reality Software and Technology (VRST) 2009, 2010
- ❖ International Conference on Optical Instrument and Technology, 2009, 2011

Journal/Conference Referee

- ❖ OSA Journals: Optics Express, Optics Letter, Applied Optics, and JOSA
- ❖ SPIE Journals: Optical Engineering, Journal of Electronic Imaging
- ❖ IEEE Journals: IEEE Transactions on Systems, Man, and Cybernetics, IEEE Computer Graphics and Applications, IEEE Transactions on Visualization and Computer Graphics, IEEE Proceedings,
- ❖ Other Journals: Journal of Optics, International Journal of Human Computer Interaction, Journal of Presence: Teleoperators and Virtual Environments, Computer Vision and Image Understanding, Optics Communication, Image and Vision Computing , Journal of Virtual Reality
- ❖ Major Conferences: a variety of IEEE and ACM conferences such as IEEE VR, IEEE/ACM ISMAR, ACM VRST, IEEE Visualization, ACM UIST 2005, ACM Computer-Human Interaction (CHI), SIGGRAPH, International Conference on Computer Vision, International Conference on Computer Vision and Pattern Recognition etc.

Departmental/College Committees and Services

- ❖ Optical Sciences Colloquium Committee, 2008-2009, 2010-2012
- ❖ Undergraduate Curriculum Committee, College of Optical Sciences, 2004-present
- ❖ Graduate Admission Committee, College of Optical Sciences, 2006-2007, 2011-2012
- ❖ Jack D. Gaskill Scholarship Committee, 2006
- ❖ Optical Engineering Faculty Search Committee, 2005, 2009, 2010
- ❖ Graduate Comprehensive Exam—Oral Examination Committee Participation (2005-present)
- ❖ Service on Thesis/Dissertation Committees (other than as advisor) (2005-present)

University Committees and Services

- ❖ University Committee on Ethics and Commitment (2008-2011), elected in June 2008 for a three-year service, elected to serve as Vice Chair for 2010-2011
- ❖ Proposal Evaluation Committee for Spatially Immersive Environment Project, the Center for Computing and Information Technology, University of Arizona, 2004

Local/State Outreach

- ❖ 2011 SPIE Visiting Lecturer at the 1st Regional Meeting on Optics (CREO-CICESE) 2011
- ❖ Optical Sciences Community Speaker, University of Arizona, 03/2004 and 04/2007
- ❖ Lecturer/Demonstrator, Arizona Youth University: Optical Sciences Camp, Tucson, Arizona, 06/2006
- ❖ Participant, the Open House held by College of Optical Sciences (in coordination with the 2005 Optical Society of America Annual Meeting), 10/2005
- ❖ Demonstrator, "UA Daughters on Campus" event, 04/2004
- ❖ Lecturer, ICS Student Club, University of Hawaii at Mãnoa, 11/2003
- ❖ Participant, the yearly Open House held by Beckman Institute for Advanced Science and Technology, 03/2002 and 03/2001

Grants and Contracts (>3 Million 2000-2011)

Federal Grant Awards

1. National Science Foundation / Information and Intelligent Systems/Human Centered Computing, "Development and Assessment of an Eyeglass-style Eyetracked Near-Eye Display using Freeform Optical Technology", 2011-2014 ($499,599).
2. National Institute of Health/"Development of a multi-resolution foveated endoscope," 2011-2013 ($420,000).
3. National Science Foundation / Information and Intelligent Systems/Human Centered Computing, "Enabling focus cues in stereoscopic displays", 2009-2012 ($497,599).
4. National Science Foundation / Information and Intelligent Systems, "CAREER: Development of a heterogeneous display environment to support complex data visualization", 2007-2012 ($500,001).
5. National Science Foundation / Information and Intelligent Systems, "Development and assessment of a polarized head mounted projective display technology," 2005-2008 ($310,047).
6. National Science Foundation / Information and Intelligent Systems, "IIS/HCI: Collaborative Research: Development and assessment of head-mounted fovea-contingent display technology, " 2003-2007 ($375,818 out of $750,000 total budget).
7. National Science Foundation / Information Technology Research (ITR), "IIS/HCI: Collaborative Research: Development of head-mounted projective display for distance collaborative environments, " 2000-2004 ($294,857 out of $500,000 total budget)
8. NAVY /STTR phase I and Option (Partner with SA Photonics Corporation), "Development of low-cost augmented reality head mounted display", 07/2009~05/2010 ($30,000 out of $100,000).
9. NAVY /STTR phase II (Partner with SA Photonics Corporation), "Development of low-cost augmented reality head mounted display, " 11/2010~05/2012 ($170,376).
10. DARPA(Defense Advanced Research Project Agency)/SBIR phase I through UtopiaCompression Corporation, "A novel high-resolution panoramic camera", 01/2010~07/2010 ($12,754).

Private Funds

11. Osterhout Design Group, "Free-form prism-based design for a see-through head mounted display", 02/2010~03/2010 ($12,793).
12. Beckman Institute Research Grant, "Development of a head-mounted projective display for collaborative environments", Beckman Foundation, 2000-2002 ($60,000).

13. Beckman Institute Research Grant, "Design and integration of head-mounted display with eye tracking capability," Beckman Foundation, 2000-2001 ($35,000).

Other Grants
14. Faculty Travel Grant, University of Arizona, October 2005 ($750).

Industrial Consulting/Partnerships
1. Augmented Vision Inc, Tucson, AZ, Co-founder, 2010-
2. UtopiaCompression Corporation, Los Angeles, CA, Development of a novel high-resolution panoramic camera, 2009-
3. Trex Enterprises, San Diego, CA, Dynamic foveal vision display, 2009-2010
4. SAPhotonics, San Francisco, CA, Development of a low-cost augmented reality head mounted display, 2009-
5. Vision Technology, Champaign, IL, Development of a novel hemispherical view camera, 2001-2002.

Publications (Published or Accepted)
❖ *An asterisk (*) indicates publications substantially based on work done as a graduate student*
❖ *Brief summary of results from selected articles is given at the end of the CV and also available at:*
   http://3dvis.optics.arizona.edu/publications/results.pdf
❖ *PDF files of most of the following publications can be obtained at:*
   http://3dvis.optics.arizona.edu/publications/publications.html

Chapters in Scholarly Books and Monographs
1. Hong Hua, Leonard Brown, and Rui Zhang, "Head-mounted Projection Display Technology and Application," in Handbook of Augmented Reality, Springer Science+Business Media, 2011.
2. J. P. Rolland and Hong Hua, "Head-mounted display systems," in *Encyclopedia of Optical Engineering* (Editors: R. Barry Johnson and Ronald G. Driggers), New York, NY: Marcel Dekker, pp.1-13, 2005.
3. J. P. Rolland, F. Biocca, C. Gao, Hong Hua, and O. Harrysson. "Design and prototyping of a teleportal ultra-light weight large field of view head mounted display," in Virtual Reality and Augmented Reality Applications in Manufacturing (Editors: Ong, S. K., and Nee, A. Y. C.), Publisher: Springer, pp.179-200, July 2004.

Referred Journal Articles
4. Cheng D, Wang Y, Hua H, Sasian J: Design of a wide-angle, lightweight head-mounted display using free-form optics tiling. Opt Lett; 2011 Jun 1;36(11):2098-100.
5. Sangyoon Lee and Hong Hua, "Effects of viewing conditions and rotation methods in a collaborative tabletop AR environment," in IEEE Transactions on Visualization and Computer Graphics, 2011.
6. Sheng Liu and Hong Hua, "Extended depth-of-field microscopic imaging with a variable focus microscope objective," *Optics Express*, 19(1):353-362, 2011.
7. Dewen Cheng, Yongtian Wang, and Hong Hua, "Automatic image performance balancing in lens optimization," *Optics Express*, 18(11):11574-11588, 2010.
8. Sheng Liu and Hong Hua, "A systematic method for designing depth-fused multi-focal plane three-dimensional displays," *Optics Express*, 18(11):11562-11573, 2010.
9. Sheng Liu, Hong Hua, and Dewen Cheng "An optical see-through head-mounted display with addressable focus cues," *IEEE Trans. Vis. Comput. Graph.* **16**：381-393 (2010). (Invited).
10. Chunyu Gao, Hong Hua, and N. Ahuja, "A hemispherical imaging camera," *Computer Vision and Image Understanding* (Accepted: March 2009; Available online), 114(2):168-178, 2010.
11. Prasad Gabbur, Hong Hua, and K. Barnard, "A fast connected components labeling algorithm for real-time pupil detection," *Machine Vision and Applications Journal* (Accepted: December 2008; Published online first: January 2009), 21(5):779-787, 2010.

12. Sheng Liu and Hong Hua, "Time-multiplexed dual-focal plane head-mounted display with a fast liquid lens," *Optics Letter*, 34(11):1642-44, June 2009.

13. Rui Zhang and Hong Hua, "Imaging quality of a retroreflective screen in head-mounted projection displays," *Journal of Optical Society of America: A,* 26(5): 1240-1249, May 2009.

14. Dewen Cheng, Yongtian Wang, Hong Hua, and M. M. Talha, "Design of an optical see-through head-mounted display with a low f-number and large field of view using a freeform prism," *Applied Optics*, 48(14): 2655-2668, May 2009.

15. Ji-young Oh and Hong Hua, "Usability of multi-scale interfaces for 3D workbench displays," in Journal of *Presence: Teleoperators and Virtual Environments,* 17(5): 415-440, October, 2008.

16. Rui Zhang and Hong Hua, "Design of a polarized head-mounted projection display using ferroelectric liquid-crystal-on-silicon microdisplays," *Applied Optics,* 47(15): 2888-96, May 2008.

17. Xiaorui Wang and Hong Hua, "Theoretical analysis for integral imaging performance based on microscanning of microlens array," *Optics Letter*, 33(5): 449-451, February 2008.

18. Rui Zhang and Hong Hua, "Characterizing polarization management in a p-HMPD system," *Applied Optics*, 47(4):512-522, January 2008.

19. Hong Hua and Sheng Liu, "A dual-sensor foveated imaging system," *Applied Optics*, 47(3): 317-27, January 2008. This article is also listed in *Virtual Journal for Biomedical Optics*, 3(2).

20. Hong Hua, Craig Pansing, and J. P. Rolland, "Modeling of an eye-imaging system for optimizing illumination schemes in an eye-tracked head-mounted display," *Applied Optics,* 46(31): 7757-70, October 2007 (cover story). This article is also listed in *Virtual Journal for Biomedical Optics*, 2(12).

21. Hong Hua and C. Gao, "Online calibration of a head-mounted projection display for augmented reality systems," *Journal of Society for Information Displays,* 15(11):1-9, 2007.

22. Hong Hua, C. Gao, and N. Ahuja, "Calibration of an augmented reality system using head-mounted projective displays," *IEEE Transactions on Systems, Man, Cybernetics (Part A: Systems)*, 37(3): 416-30, 2007.

23. Hong Hua and C. Gao, "Design of a polarized head-mounted projection display," *Applied Optics*, 46(14): 2600-10, April 2007. This article is also listed in *Virtual Journal for Biomedical Optics*, 2(6).

24. Hong Hua, N. Ahuja, and C. Gao. "Design analysis of a high resolution panoramic camera using conventional imagers and a mirror-pyramid," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 29(2): 356-61, February 2007.

25. Leonard Brown and Hong Hua, "Magic Lenses for augmented virtual environments," *IEEE Computer Graphics and Applications*, 26(4): 64-73, July/August 2006.

26. Hong Hua, Prasana Krishnaswamy, and J. P. Rolland, "Video-based eyetracking methods and algorithms in head-mounted displays," *Optics Express,* 14(10): 4328-50, May 2006.

27. K. Tan, Hong Hua, and N. Ahuja. "Multiview panoramic cameras using a mirror pyramid," *IEEE Transactions on Pattern Analysis and Machine Intelligence,* 26(7): 941-6, July 2004.

28. Hong Hua, Leonard Brown, and C. Gao, "System and interface framework for SCAPE as a collaborative infrastructure," *Presence: Teleoperators and Virtual Environments,* 13(2): 234-250, April 2004 (cover story).

29. Hong Hua, Leonard Brown, and C. Gao, "SCAPE: Supporting Stereoscopic Collaboration in Augmented and Projective Environments," *IEEE Computer Graphics and Application,* 24(1): 66-75, January/February 2004.

30. Hong Hua, Y. Ha, and J. P. Rolland. "Design and assessment of an ultra-light and compact projection lens using DOE and plastic components for head-mounted projective displays," *Applied Optics,* 42(1): 97-107, January 2003.

31. *Hong Hua, Y. Wang, and D. Yan. "Low-cost dynamic rangefinding device based on amplitude-modulated continuous ultrasonic wave," *IEEE Transactions on Instrumentation and Measurements*, 51(2): 362-7, April 2002.

32. Hong Hua, A. Girardot, C. Gao, and J. P. Rolland. "Engineering of head-mounted projective displays," *Applied Optics*, 39 (22): 3814-3824, August 2000.

33. *Hong Hua, Y. Wang, X. Guo. "Design principle and error analysis of 6DOF ultrasonic position and

orientation tracker," *Zidonghua Xuebao/Acta Automatica Sinica*, 26 (6): 840-4, November 2000.

34. *Hong Hua, X. Guo, Y. Wang. "Design principle and error analysis of 3D ultrasonic position tracker," *Chinese Journal of Scientific Instruments*, Vol. 21 (3): 326-330, June 2000 (in Chinese).

35. *Hong Hua, Y. Wang. "Design of position tracker using continuous ultrasonic wave and its application in virtual reality," *Acta Electronica Sinica*, 27 (12): 98-101, December 1999 (in Chinese).

36. *Hong Hua, Y. Wang, T. Xu. "Dynamic rangefinding device using amplitude-modulated continuous ultrasonic wave," *Journal of Beijing Institute of Technology* (English Edition), 7(1): 55-61, 1998.

37. *S. Zhang, Y. Wang, Hong Hua, "Diffraction efficiency calculation of planar grating using rigorous coupled-wave theory," *Optical Techniques*, (1): 2-6, January 1998 (in Chinese).

38. *D. He, Y. Wang, X. Yuang, Hong Hua. "An optical viewing system for virtual reality," *Opto-Electronic Engineering*, 24(5): 41-5, May 1997 (in Chinese).

39. *Y. Wang, Hong Hua, D. He etc. "Technical features of GOLD--software for general optical lens design," *Journal of Beijing Institute of Technology*, 16(5): 483-9, May 1996.

Refereed Proceeding Articles (3~5 peer reviewers) *(Only rigorously peer-reviewed conference articles listed in this category)*

40. Rui Zhang and Hong Hua, "Effects of a Retroreflective Screen on Depth Perception in a Head-mounted Projection Display," Proceedings of 2010 *IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR'2010).*

41. Leonard D. Brown and Hong Hua, "An evaluation of physical affordances in augmented virtual environments: Dataset grounding and magic lens," Proceedings of IEEE Virtual Reality 2010, pp. 23-26, March 2010.

42. Sangyoon Lee and Hong Hua, "Effects of viewing conditions and rotation methods in a collaborative tabletop AR environment," Proceedings of IEEE Virtual Reality 2010, pp.163-170, March 2010.

43. **(Best Student Paper Award)** Sheng Liu, Dewen Cheng, and Hong Hua, "An optical see-through head-mounted display with addressable focal planes," *Proceedings of 2008 IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR'2008),* pp. 33-42, September 2008 (<15% acceptance rate for full papers).

44. Sheng Liu and Hong Hua, "Spatialchromatic foveation for gaze contingent displays," *Proceedings of the 2008 ACM symposium on Eye Tracking Research and Applications* (ETRA'08), pp. 139-142, March 2008.

45. C. Gao, N. Ahuja, and Hong Hua, "Active aperture control and sensor modulation for flexible imaging," *Proceedings of International Conference on Computer Vision and Pattern Recognition (CVPR'2007),* pp.1-8, June 2007 (<28.2% acceptance rate).

46. Ji-Young Oh and Hong Hua, "User evaluations on form factors of tangible magic lenses," *Proceedings of 2006 IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR'2006),* pp.23-32, October 2006 (<26% acceptance rate for full papers).

47. Hong Hua and C. Gao, "A polarized head-mounted projective displays," *Proceedings of 2005 IEEE and ACM International Symposium on Mixed and Augmented Reality,* pp. 32-35, October 2005 (<22% acceptance rate for short papers).

48. Leonard Brown, Hong Hua, and C. Gao, "A widget framework for augmented interaction in SCAPE," *Proceedings of 2003 ACM User Interface of Software and Technology (UIST 2003)*, also in *Computer Human Interaction* (*CHI*) *Letters*, 5(2), 1-10, October 2003 (<20% acceptance rate).

49. (**Best Paper Award, Honorable Mention**)Hong Hua, Leonard Brown, and C. Gao, "A new collaborative infrastructure: SCAPE," *Proceedings of IEEE Virtual Reality 2003 (VR'2003),* pp. 171-179, March 2003 (<28% acceptance rate).

50. C. Gao, Hong Hua, and N. Ahuja, "Easy calibration of a head-mounted projective display for augmented reality systems," *Proceedings of IEEE Virtual Reality 2003 (VR'2003),* pp. 53-60, March 2003 (<28% acceptance rate).

51. Hong Hua, C. Gao, and N. Ahuja, "Calibration of a head-mounted projective display for augmented reality systems," *Proceedings of 2002 IEEE and ACM International Symposium on Mixed and Augmented Reality*

(ISMAR'2002), pp.176-185, September 2002 (<28% acceptance rate).

52. K. Tan, Hong Hua, N. Ahuja, "Multi-view mirror pyramid panoramic camera," *Proceedings of 2002 IEEE Workshop on Omnidirectional Vision*, pp. 87-93, June 2002.

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This is a true and accurate statement of my activities and accomplishments. I understand that misrepresentation in securing promotion and tenure may lead to dismissal or suspension under ABOR Policy 6-201 J.1.b.

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