

# **RYAN P. MCMAHAN**

## **ASSISTANT PROFESSOR**

The University of Texas at Dallas  
800 West Campbell Rd; EC31  
Richardson, TX 75080  
Phone: 972-883-6610  
Email: rymcmaha@utdallas.edu  
<http://www.utdallas.edu/~rymcmaha>

### **EDUCATION**

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#### **Ph.D., Computer Science, Virginia Tech, December 2011**

- Dissertation: “Exploring the Effects of Higher-Fidelity Display and Interaction for Virtual Reality Games”
- Committee: Doug A. Bowman, Rachael B. Brady, Yong Cao, Chris North, Nicholas F. Polys

#### **M.S., Computer Science, Virginia Tech, June 2007**

- Thesis: “Exploring and Evaluating Task Sequences for System Control Interfaces in Immersive Virtual Environments”
- Committee: Doug A. Bowman, Chris North, Manuel A. Pérez-Quñones

#### **B.S., Computer Science, Virginia Tech, May 2004**

- Graduated magna cum laude
- Minor: Mathematics

### **PROFESSIONAL APPOINTMENTS**

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- Assistant Professor, Arts and Technology Program, University of Texas at Dallas, October 2013 – Present
- Assistant Professor, Dept. of Computer Science, University of Texas at Dallas, August 2012 – Present
- Adjunct Assistant Professor, Dept. of Anesthesiology, Duke University, August 2012 – Present
- Interim Director, Duke Immersive Virtual Environment (DiVE), Duke University, June 2012 – July 2012
- Postdoctoral Associate, Pratt School of Engineering, Duke University, February 2012 – July 2012
- Research Assistant, Institute for Distance and Distributed Learning, Virginia Tech, August 2008 – January 2012
- Research Assistant, Virginia Center for Coal and Energy Research, Virginia Tech, January 2006 – August 2008
- Teaching Assistant, Dept. of Computer Science, Virginia Tech, August 2004 – May 2005

### **HONORS AND AWARDS**

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- First Place Award, Virtual Student Center Design Competition, Virginia Tech, May 2008
- Outstanding Masters Thesis Award, Dept. of Computer Science, Virginia Tech, May 2007
- First Place Industry Choice Award, Undergraduate Research Symposium, Virginia Tech, April 2004
- Valedictorian, Marion Senior High School, Marion, VA, May 2001

### **RESEARCH INTERESTS**

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- Virtual reality (VR)
- Training transfer
- Portable immersive technologies
- Multimodal sensory displays
- 3D user interfaces (3DUIs)
- Human-computer interaction (HCI)

## FUNDED RESEARCH

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### Grants:

1. “Virtual Reality for Safety Training.” June 2015 – May 2016. Funded by I/UCRC iPerform industry fund associated with NSF award IIP-1439718. **\$40,000**. Sole PI. Responsible for 100%.
2. “VR Collaboration with CASL’s Virtual Office Community and Computing (VOCC) Laboratory.” January 2014 – May 2015. Funded by Oak Ridge National Laboratory. **\$69,513**. Sole PI. Responsible for 100%.

### Gifts:

1. “Haptic Sleeve Project.” July 2013. Gift from T. Boone Pickens Foundation. **\$5,615**. Sole PI. Responsible for 100%.

### Awards:

1. “Development of BCI for VR Applications.” December 2014 – May 2015. Funded by University of Texas at Dallas, Undergraduate Research Scholar Award. **\$300**. Faculty Advisor. Responsible for 100%.
2. “Effects of Immersion on Detail Retention.” December 2014 – May 2015. Funded by University of Texas at Dallas, Undergraduate Research Scholar Award. **\$300**. Faculty Advisor. Responsible for 100%.
3. “Using LEGOs to Evaluate Training Transfer.” December 2012 – May 2013. Funded by University of Texas at Dallas, Undergraduate Research Scholar Award. **\$300**. Faculty Advisor. Responsible for 100%.

## SCHOLARLY OUTPUT

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### Journal Papers:

1. E. D. Ragan, D. A. Bowman, R. Kopper, C. Stinson, S. Scerbo, and **R. P. McMahan**, “Effects of Field of View and Visual Complexity on Virtual Reality Training Effectiveness for a Visual Scanning Task,” *IEEE Transactions on Visualization and Computer Graphics*, vol. 21, iss. 7, pp. 794-807, 2015.
2. D. A. Bowman, **R. P. McMahan**, and E. D. Ragan, “Questioning Naturalism in 3D User Interfaces,” *Communications of the ACM*, vol. 55, iss. 9, pp. 78-88, 2012.
3. **R. P. McMahan**, D. A. Bowman, D. J. Zielinski, and R. B. Brady, “Evaluating Display Fidelity and Interaction Fidelity in a Virtual Reality Game,” *IEEE Transactions on Visualization and Computer Graphics*, vol. 18, iss. 4, pp. 626-633, 2012.
4. T. Ni, D. A. Bowman, C. North, and **R. P. McMahan**, “Design and evaluation of freehand menu selection interfaces using tilt and pinch gestures,” *International Journal of Human-Computer Studies*, vol. 69, iss. 9, pp. 551-562, 2011.
5. **R. P. McMahan**, E. D. Ragan, A. Leal, R. J. Beaton, and D. A. Bowman, “Considerations for the use of commercial video games in controlled experiments,” *Entertainment Computing*, vol. 2, iss. 1, pp. 3-9, 2011.
6. R. Kopper, D. A. Bowman, M. G. Silva, and **R. P. McMahan**, “A human motor behavior model for distal pointing tasks,” *International Journal of Human-Computer Studies*, vol. 68, iss. 10, pp. 603-615, 2010.
7. D. A. Bowman and **R. P. McMahan**, “Virtual Reality: How Much Immersion Is Enough?,” *Computer*, vol. 40, iss. 7, pp. 36-43, 2007.

### Conference Papers:

1. C. Lai and **R. P. McMahan**, “Virtual Reality Ladder Climbing for Mine Safety Training,” in *37th International Symposium on the Application of Computers and Operations Research in the Mineral Industry (APCOM)*, 2015, pp. 754-760.
2. C. Lai, **R. P. McMahan**, and J. Hall, “March-and-Reach: A Realistic Ladder Climbing Technique,” in *IEEE Symposium on 3D User Interfaces (3DUI)*, 2015, pp. 15-18.
3. F. Tang, **R. P. McMahan**, and T. T. Allen, “Development of a Low-Cost Tactile Sleeve for Autism Intervention,” in *IEEE International Symposium on Haptic, Audio and Visual Environments and Games (HAVE)*, 2014, pp. 35-40.
4. D. J. Zielinski, R. Kopper, **R. P. McMahan**, W. Lu, and S. Ferrari, “Intercept Tags: Enhancing Intercept-based Systems,” in *ACM Symposium on Virtual Reality Software and Technology (VRST)*, 2013, pp. 263-266.

5. E. D. Ragan, A. Wood, **R. P. McMahan**, and D. A. Bowman, "Trade-Offs Related to Travel Techniques and Level of Display Fidelity in Virtual Data-Analysis Environments," in *Joint Virtual Reality Conference of ICAT – EGVE – EuroVR*, 2012, pp. 81-84.
6. D. A. Bowman, C. Stinson, E. D. Ragan, S. Scerbo, T. Höllerer, C. Lee, **R. P. McMahan**, and R. Kopper, "Evaluating effectiveness in virtual environments with MR simulation," in *Interservice/Industry Training, Simulation, and Education Conference (IITSEC)*, 2012, p. 12075.
7. D. J. Zielinski, **R. P. McMahan**, and R. B. Brady, "Shadow Walking: An Unencumbered Locomotion Technique for Systems with Under-floor Projection," in *IEEE Virtual Reality Conference (VR)*, 2011, pp. 167-170.
8. **R. P. McMahan**, A. J. Alon, S. Lazem, R. J. Beaton, D. Machaj, M. Schaefer, M. G. Silva, A. Leal, R. Hagan, and D. A. Bowman, "Evaluating Natural Interaction Techniques in Video Games," in *IEEE Symposium on 3D User Interfaces (3DUI)*, 2010, pp. 11-14.
9. P. Macedo and **R. P. McMahan**, "Virtual Student Center: Connecting e-Learning Students to Virginia Tech Resources," in *25th Annual Conference on Distance Teaching & Learning*, 2009, p. 20375.
10. T. Ni, **R. P. McMahan**, and D. A. Bowman, "Tech-note: rapMenu: Remote Menu Selection Using Freehand Gestural Input," in *IEEE Symposium on 3D User Interfaces (3DUI)*, 2008, pp. 55-58.
11. J. D. Lucas, **R. P. McMahan**, R. Engle, D. A. Bowman, W. Thabet, and S. Schafrik, "Improving Health and Safety Through Conveyor System Training in a Virtual Environment," in *First International Future Mining Conference and Exhibition*, 2008, pp. 161-166.
12. **R. P. McMahan**, D. A. Bowman, S. Schafrik, and M. Karmis, "Virtual Environment Training for Preshift Inspections of Haul Trucks to Improve Mining Safety," in *Proceedings First International Future Mining Conference and Exhibition*, 2008, pp. 167-174.
13. **R. P. McMahan** and D. A. Bowman, "An Empirical Comparison of Task Sequences for Immersive Virtual Environments," in *IEEE Symposium on 3D User Interfaces (3DUI)*, 2007, pp. 25-32.
14. **R. P. McMahan**, D. Gorton, J. Gresock, W. McConnell, and D. A. Bowman, "Separating the Effects of Level of Immersion and 3D Interaction Techniques," in *ACM Symposium on Virtual Reality Software and Technology (VRST)*, New York, NY, USA, 2006, pp. 108-111.

#### Workshop Papers:

1. J. C. Eubanks, C. Lai, and **R. P. McMahan**, "Portable Virtual Reality: Inertial Measurements and Biomechanics," in *IEEE Workshop on Everyday Virtual Reality (WEVR)*, IEEE, 2015, pp. 1-4.
2. D. J. Zielinski, **R. P. McMahan**, S. Shokur, E. Morya, and R. Kopper, "Enabling Closed-Source Applications for Virtual Reality via OpenGL Intercept-Based Techniques," in *IEEE Workshop on Software Engineering and Architectures for Realtime Interactive Systems (SEARIS)*, IEEE, 2014, pp. 59-64.
3. N. S. Herrera and **R. P. McMahan**, "Development of a Simple and Low-Cost Olfactory Display for Immersive Media Experiences," in *2nd ACM International Workshop on Immersive Media Experiences*, ACM, 2014, pp. 1-6.
4. D. A. Bowman, **R. P. McMahan**, C. Stinson, E. D. Ragan, S. Scerbo, T. Höllerer, C. Lee, and R. Kopper, "Evaluating effectiveness in virtual environments with MR simulation," in *Marine Corps Warfighting Laboratory Workshop on Physiological Measures of Immersion*, US Marine Corps, 2011.

#### Refereed Abstracts:

1. A. G. Moore, M. J. Howell, A. W. Stiles, N. S. Herrera, and **R. P. McMahan**, "Wedge: A Musical Interface for Building and Playing Composition-Appropriate Immersive Environments," in *IEEE Symposium on 3D User Interfaces (3DUI)*, IEEE, 2015, pp. 205-206.
2. F. Tang, **R. P. McMahan**, E. D. Ragan, and T. T. Allen, "A Modified Tactile Brush Algorithm for Complex Touch Gestures," in *IEEE Virtual Reality Conference (VR)*, IEEE, 2015, pp. 295-296.
3. A. G. Moore, N. S. Herrera, T. C. Hurst, **R. P. McMahan**, and S. Poeschl, "The Effects of Olfaction on Training Transfer for an Assembly Task," in *IEEE Virtual Reality Conference (VR)*, IEEE, 2015, pp. 237-238.
4. B. Izatt, K. Scholberg, and **R. P. McMahan**, "Super-KAVE: An Immersive Visualization Tool for Neutrino Physics," in *IEEE Virtual Reality Conference (VR)*, IEEE, 2013, pp. 75-76.
5. D. J. Zielinski, **R. P. McMahan**, W. Lu, and S. Ferrari, "ML2VR: Providing MATLAB Users an Easy Transition to Virtual Reality and Immersive Interactivity," in *IEEE Virtual Reality Conference (VR)*, IEEE, 2013, pp. 83-84.

6. **R. P. McMahan**, M. Steele, R. Fink, D. Turner, and J. Taekman, "Identification of Subject-Matter-Expert Effort Required for the Development and Validation of Healthcare Training-Based Virtual Environments," in *13th Annual International Meeting on Simulation in Healthcare (IMSH)*, Society for Simulation in Healthcare, 2012, vol. 7, p. 431.

#### Book Chapters:

1. **R. P. McMahan**, R. Kopper, and D. A. Bowman, "Principles for Designing Effective 3D Interaction Techniques," in *Handbook of Virtual Environments: Design, Implementation, and Applications, Second Edition*, K. S. Hale and K. M. Stanney, Eds., CRC Press, 2014, pp. 285-311.
2. **R. P. McMahan**, S. Schafrik, D. A. Bowman, and M. Karmis, "Virtual Environments for Surface Mining Powered Haulage Training," in *Extracting the Science: A Century of Mining Research*, J. F. Brune, Ed., Society for Mining, Metallurgy and Exploration, 2010, pp. 520-528.

#### Edited Volumes:

1. *Advances in Visual Computing: 10th International Symposium, ISVC 2014, Las Vegas, NV, USA, December 8-10, 2014, Proceedings, Part I*, G. Bebis, R. Boyle, B. Parvin, D. Koracin, **R. P. McMahan**, J. Jerald, H. Zhang, S. M. Drucker, C. Kambhamettu, M. El Choubassi, Z. Deng, and M. Carlson, Eds., Cham: Springer International Publishing, 2014, vol. 8887.
2. *Advances in Visual Computing: 10th International Symposium, ISVC 2014, Las Vegas, NV, USA, December 8-10, 2014, Proceedings, Part II*, G. Bebis, R. Boyle, B. Parvin, D. Koracin, **R. P. McMahan**, J. Jerald, H. Zhang, S. M. Drucker, C. Kambhamettu, M. El Choubassi, Z. Deng, and M. Carlson, Eds., Cham: Springer International Publishing, 2014, vol. 8888.

#### Significant Talks:

1. **R. P. McMahan**, *Bringing Virtual Reality Home*, TEDxUTD: Beneath the Surface, Richardson, TX, April 12, 2015.

#### Other Talks:

1. **R. P. McMahan**, F. Tang, J. C. Eubanks, and A. Stiles, *Future Immersive Virtual Environments (FIVE) Lab*, Computer Science Teachers Association Annual Conference, Richardson, TX, July 13, 2015.
2. **R. P. McMahan**, *Future Immersive Virtual Environments (FIVE) Lab*, Dallas Unity Meetup, Richardson, TX, June 13, 2015.
3. **R. P. McMahan**, *Virtual Reality for Safety Training*, Industrial Advisory Board, NSF I/UCRC iPerform Center, Arlington, TX, April 8, 2015.
4. J. Shapiro, **R. P. McMahan**, and L. Rodrigues, *From University Research to Real World Innovation*, E. Banwo and M. Palmer, Mods., Dallas Startup Week, Dallas, TX, March 6, 2015.
5. **R. P. McMahan**, *The Effects of Tactile and Olfactory Fidelities*, Computer Science Colloquium, University of Texas at Dallas, Richardson, TX, November 7, 2014.
6. **R. P. McMahan**, *Virtual Reality and Robots*, UTD Robotics Initiative Meeting, University of Texas at Dallas, Richardson, TX, July 25, 2014.
7. **R. P. McMahan**, *Virtual Reality and Training Transfer*, Medical Research Group, Intuitive Surgical, Inc., Sunnyvale, CA, June 5, 2014.
8. **R. P. McMahan**, *Future Immersive Virtual Environments (FIVE) Lab*, ATEC Watering Hole, University of Texas at Dallas, Richardson, TX, April 18, 2014.
9. **R. P. McMahan**, *Virtual Reality: The Future of Learning*, Explore Engineering Day, University of Texas at Dallas, Richardson, TX, February 22, 2014.
10. **R. P. McMahan**, *Future Immersive Virtual Environments (FIVE) Lab*, Computer Science Alumni Luncheon, University of Texas at Dallas, Richardson, TX, November 8, 2013.
11. **R. P. McMahan**, *The Effects of System Fidelity for Virtual Reality Applications*, Computer Science and Mathematics Division Seminar, Oak Ridge National Laboratory, Oak Ridge, TN, May 29, 2013.
12. **R. P. McMahan**, *The Effects of System Fidelity for Virtual Reality Applications*, Art Rendezvous Science (ARS) Colloquium, University of Texas at Dallas, Richardson, TX, April 10, 2013.

13. **R. P. McMahan**, *The Effects of System Fidelity for Virtual Reality Applications and Training Transfer*, Computer Science Colloquium, University of Texas at Dallas, Richardson, TX, September 21, 2012.
14. **R. P. McMahan**, *Virtual Reality and 3D User Interfaces*, ARTSI Faculty Workshop, University of Pennsylvania, Philadelphia, PA, June 19, 2012.
15. **R. P. McMahan**, *Exploring the Effects of Higher-Fidelity Display and Interaction for Serious Virtual Reality Games*, HCI Seminar, Virginia Tech, Blacksburg, VA, September 9, 2011.
16. **R. P. McMahan**, *Exploring the Effects of Display Fidelity and Interaction Fidelity*, Visualization Friday Forum, Duke University, Durham, NC, November 19, 2010.
17. **R. P. McMahan**, *Evaluating Natural Interaction Techniques in Video Games*, CHCI Student Speaker Series, Virginia Tech, Blacksburg, VA, March 5, 2010.
18. **R. P. McMahan** and S. Schafrik, *Visualization Initiatives at Virginia Tech*, 2nd International Mining VR Group Workshop, University of New South Wales, Sydney, Australia, November 24, 2008.

#### Technical Reports:

1. **R. P. McMahan**, E. D. Ragan, D. A. Bowman, F. Tang, and C. Lai, "FIFA: The Framework for Interaction Fidelity Analysis," UTDCS-06-15, Dept. of Computer Science, University of Texas at Dallas, 2015.
2. R. Kopper, M. G. Silva, **R. P. McMahan**, and D. A. Bowman, "Increasing the Precision of Distant Pointing for Large High-Resolution Displays," TR-08-17, Dept. of Computer Science, Virginia Tech, 2008.

#### Theses:

1. **R. P. McMahan**, "Exploring the Effects of Higher-Fidelity Display and Interaction for Virtual Reality Games," PhD Thesis, Virginia Tech, 2011.
2. **R. P. McMahan**, "Exploring and Evaluating Task Sequences for System Control Interfaces in Immersive Virtual Environments," Master Thesis, Virginia Tech, 2007.

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## TEACHING

#### Instructor, University of Texas at Dallas:

- CS/CGS 4353 Human-Computer Interactions II, Spring 2015. [Instructor Evaluation: 4.76 / 5.0]
- CS/CGS 4352 Human-Computer Interactions I, Fall 2014. [Instructor Evaluation: 4.88 / 5.0]
- CS 6301 Special Topics in Computer Science: Virtual Reality, Fall 2014. [Instructor Evaluation: 4.94 / 5.0]
- CS 6301/ATEC 6389 Special Topic: Virtual Reality, Spring 2014. [Instructor Evaluation: 5.0 / 5.0]
- CS/CGS 4352 Human-Computer Interactions I, Fall 2013. [Instructor Evaluation: 4.71 / 5.0]
- CS/CE 6378 Advanced Operating Systems, Fall 2013. [Instructor Evaluation: 4.89 / 5.0]
- CS 6301 Special Topics in Computer Science: Virtual Reality, Spring 2013. [Instructor Evaluation: 4.98 / 5.0]
- CS/CE 6378 Advanced Operating Systems, Fall 2012. [Instructor Evaluation: 4.78 / 5.0]

#### Teaching Assistant, Virginia Tech:

- CS 3204 Operating Systems, Spring 2005
- CS 4204 Computer Graphics, Fall 2004

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## ADVISING

#### Current Ph.D. Students:

1. Nicolas Herrera, Computer Science, University of Texas at Dallas
2. James Coleman Eubanks, Arts and Technology, University of Texas at Dallas
3. Chengyuan Lai, Computer Science, University of Texas at Dallas
4. Fei Tang, Computer Science, University of Texas at Dallas

**Current M.S. Thesis Students:**

1. Alec Moore, Computer Science, University of Texas at Dallas

**Completed M.S. Thesis Students:**

1. Lesley Titus Pandian Thamarai, M.S., Computer Science, University of Texas at Dallas, Spring 2015. Thesis: "Developing a High-Precision, High-Fidelity LEGO Simulator."
2. Jian Ma, M.S., Computer Science, University of Texas at Dallas, Fall 2014. Thesis: "Evaluation and Comparison of Head-Mounted Displays in Immersive Virtual Environments."

**Completed M.F.A. Project Students:**

1. Michael Howell, M.F.A., Arts and Technology, University of Texas at Dallas, Spring 2015.

**Thesis and Dissertation Committees:**

1. Cameron Watkins, M.S., Computer Science, University of Texas at Dallas, Spring 2015.
2. Ganesh Salvi, M.S., Computer Science, University of Texas at Dallas, Fall 2014.
3. Yin Yang, Ph.D., Computer Science, University of Texas at Dallas, Summer 2013.

**Undergraduate Research Students:**

1. Andrew Lenczycki, Computer Science, University of Texas at Dallas, Summer 2015.
2. Marriam Khan, Computer Science, University of Texas at Dallas, Summer 2015.
3. Rahat Ahmed, Computer Science, University of Texas at Dallas, Summer 2015.
4. Shayan Monadjemi, Computer Science, University of Texas at Dallas, Summer 2015.
5. Stephen Kuehl, Computer Science, University of Texas at Dallas, Summer 2015.
6. Nicolas Herrera, Computer Science, University of Texas at Dallas, Spring 2015.
7. Tyler Hurst, Computer Science, University of Texas at Dallas, Spring 2014.
8. Tyler Hurst, Computer Science, University of Texas at Dallas, Fall 2013.
9. Max Frazier, Software Engineering, University of Texas at Dallas, Fall 2013.
10. Max Frazier, Software Engineering, University of Texas at Dallas, Summer 2013.
11. Max Frazier, Software Engineering, University of Texas at Dallas, Spring 2013.

**PROFESSIONAL SERVICE** 

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**Editorships:**

- Associate Editor, International Journal of Human-Computer Studies, 2014 – Present
- Review Editor, Frontiers in Virtual Environments, 2014 – Present

**Chairs:**

- Web Co-chair, IEEE Virtual Reality Conference, 2016
- 3DUI Contest Co-chair, IEEE Symposium on 3D User Interfaces, 2016
- Publication Co-chair, IEEE Virtual Reality Conference, 2015
- Session Chair, IEEE Virtual Reality Conference, 2015
- Virtual Reality Co-chair, International Symposium on Visual Computing, 2014
- Videos Co-chair, IEEE Virtual Reality Conference, 2014
- Student Volunteers Co-chair, IEEE Virtual Reality Conference, 2008
- Student Volunteers Co-chair, IEEE Virtual Reality Conference, 2007

**Committees:**

- Program Committee, IEEE Virtual Reality Conference, 2015
- Program Committee, IEEE Symposium on 3D User Interfaces, 2015
- Program Committee, ACM Symposium on Spatial User Interaction, 2015
- Program Committee, ACM Symposium on Virtual Reality Software and Technology, 2015
- Technical Program Committee, IEEE International Symposium on Haptic, Audio and Visual Environments and Games, 2015
- Program Committee, IEEE Virtual Reality Conference, 2014
- Program Committee, IEEE Symposium on 3D User Interfaces, 2014
- Technical Program Committee, IEEE International Symposium on Haptic, Audio, and Visual Environments and Games, 2014

**Memberships:**

- Association for Computing Machinery (ACM), 2007 – Present
- Institute of Electrical and Electronics Engineers (IEEE), 2007 – Present

**UNIVERSITY SERVICE** 

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**University Committees:**

- ATEC Dean Search Committee, 2015 – Present
- Immersive Research and Instructional Spaces (IRIS) Campaign Committee, 2014 – 2015
- 3D Visualization Lab Feasibility Study Committee, 2013 – 2014

**University Graduate Studies Chairs:**

- Outside Final Exam Chair, Telecommunications Engineering, July 6, 2015
- Outside Final Exam Chair, Management Science, June 28, 2013

**Department Chairs:**

- Publicity and Website Committee Chair, Dept. of Computer Science, 2013 – Present
- Motion Capture Lab Co-chair, Arts and Technology Program, 2014 – Present
- John Carmack Visit Committee, Arts and Technology Program, 2015

**Department Committees:**

- Ph.D. Recruitment Committee, Dept. of Computer Science, 2013 – Present
- Graduate Admissions Committee, Dept. of Computer Science, 2012 – Present
- Curriculum Committee, Arts and Technology Program, 2013 – 2014
- Qualifying Exam Committee for Advanced Operating Systems, Dept. of Computer Science, 2012 – 2014

**OUTREACH SERVICE** 

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**Research Experiences:**

- Advisor, FIVE Lab Summer Research Program for Underrepresented High School Students, University of Texas at Dallas, 2015
- Advisor, UT Dallas – Mexico Research Summer Program, University of Texas at Dallas, 2015
- Advisor, Clark Foundation Summer Scholar Program, University of Texas at Dallas, 2015

- Advisor, FIVE Lab Summer Research Program for Underrepresented High School Students, University of Texas at Dallas, 2014
- Advisor, ARTSI Research Experience for Undergraduates, Duke University, 2012
- Mentor, Research Experience for Undergraduates, Virginia Tech, 2006

**Camps:**

- Instructor, Virtual Reality Game Design Camp, University of Texas at Dallas, August 11–15, 2014

**Virtual Reality Demonstrations:**

- DCC Physics Camp, University of Texas at Dallas, July 10, 2015
- Dallas Unity Group, University of Texas at Dallas, June 13, 2015
- ECS Outreach Camp, University of Texas at Dallas, June 12, 2015
- REACH of Plano, University of Texas at Dallas, April 9, 2015
- Centro de Investigación en Matemáticas, University of Texas at Dallas, March 3, 2015
- Scholars Day, University of Texas at Dallas, November 15, 2014
- Jonsson School Homecoming Alumni, University of Texas at Dallas, November 12, 2014
- CS Inspiration Award Luncheon, University of Texas at Dallas, October 24, 2014
- Richardson ISD Visit, University of Texas at Dallas, October 16, 2014
- Girls, Inc. Summer Camp, University of Texas at Dallas, June 25, 2014
- High-Tech High Heels Camp, University of Texas at Dallas, June 20, 2014
- ECS Outreach Camp, University of Texas at Dallas, June 12, 2014
- CS Outreach Orientation, University of Texas at Dallas, May 31, 2014
- State Programming Competition, University of Texas at Dallas, May 30, 2014
- Explore Engineering Day, University of Texas at Dallas, February 22, 2014