

Benjamin C. Lok

Curriculum Vitae – June 20, 2009

PERSONAL INFORMATION

CSE E342
Department of Computer and Information Science and Engineering
University of Florida – P.O. Box 116120
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EDUCATION

University of North Carolina at Chapel Hill – Chapel Hill, NC

Ph.D. in Computer Science (May 2002), *Advisor:* Professor Frederick P. Brooks, Jr.
Dissertation: Interacting with Dynamic Real Objects in Virtual Environments
M.S. in Computer Science (May 1999), *Advisor:* Professor Gary Bishop

University of Tulsa – Tulsa, OK

B.S. in Computer Science (*magna cum laude*), Minor in Mathematics (May 1997), *Advisor:*
Professor Sujeet Sheno

PROFESSIONAL EMPLOYMENT

(August 2003 – present) **Assistant Professor of Computer Science** – Department of Computer and Information Science and Engineering, *University of Florida, Gainesville, FL.*

(June 2006 – present) **Adjunct Assistant Professor of Surgery** – Department of Surgery, *Medical College of Georgia, Augusta, GA*

(August 2002 – July 2003) **Post Doctoral Research Fellow** – *UNC at Charlotte, Charlotte, NC.*

HONORS

- Steering Committee of the IEEE Virtual Reality Conference (2009)
- Speaker at the National Academy of Science Kavli France-US Frontiers of Science Symposium in Roscoff, France (2008)
- IEEE Virtual Reality 2008 Best Paper
- NSF Career Award (2007)
- University of Florida Student ACM Chapter's CISE Teacher of the Year (2005)
- ACM SIGGRAPH Symposium on Interactive 3D Graphics 2003 Top 3 Paper (2003)
- Link Foundation Fellowship in Advanced Simulation and Training (2001)
- National Science Foundation Fellowship (1997)
- Barry M. Goldwater Scholarship (1995)
- Membership: Phi Kappa Phi (1996), Tau Beta Pi (1995)
- University of Tulsa: Top Ten Seniors (1997), Top Ten Freshmen (1994), J. Paschal Twyman Scholarship (1993) – Full scholarship, one awarded annually
- National Merit Scholar (1993)

MENTORING

4 PhD students (*Joonhao Chuah, Aaron Kotranza, Brent Rossen, Mallory McManamon*)
1 Post-doctoral fellow (*Dr. Yong Ho Hwang*)

Ph.D. Alumni

2009, *John Quarles* (Assistant Professor at the University of Texas at San Antonio), LINK Foundation Fellowship 2008
2008, *Andrew Raji* (Post-doctoral fellow at the University of Memphis)

2008, *Kyle Johnsen* (Assistant Professor at the University of Georgia), HMMI Graduate Student Mentor Award

M.S. Alumni

2009, *Lu (lois) Cao* (MFA program at University of Florida)
 2005, *Cyrus Harrison* (Lawrence Livermore Research Labs)
 2005, *George Mora* (Industry)

B.S. Alumni

2008, *Harold Rodriguez* (GrooveShark.com)
 2008, *Corey Forbus* (Industry)
 2007, *Joshua Horton* (Ph.D. program at UF)
 2006, *Robert Dickerson* (Ph.D. program at Virginia Tech)
 2005, *Sayed Hashimi* (Industry)
 2005, *Art Homs* (Industry)
 2005, *Andrew Joubert* (Industry)
 2005, *Sam Preston* (Advanced Engineering Center at Old Dominion University)

FUNDING

Extramural Grants (Total: \$2,799,487. PI: \$1,254,492, Co-PI/Consultant: \$1,544,995)

Current

NIH, R01 Grant, (Co-PI, PI: Robinson), (scored 121 – top 1.9%, to be awarded)

Pain Treatment Decisions: Influence of Sex, Race, and Age

9/1/2009 – 8/31/11, Total: \$1,095,473 (20% responsibility), NIH Score: 121 (top 1.9%)

NIH, R56 Grant, (Co-PI, PI: Robinson)

Pain Treatment Decisions: Influence of Sex, Race, and Age

9/1/2008 – 8/31/09, Total: \$323,454, (21% responsibility)

Drager Medical Contract (Co-PI, PI: Lampotang)

Mixed Reality Simulation for Anesthesia Machine Training

10/1/2008 – 9/30/2009, Total: \$35,000, (5% responsibility)

NSF, Medium Grant, (IIS- 0803652) (PI, Co-PIs: Lind, Ferdig)

HCC-Medium: Mixed Reality Virtual Humans for Training

9/1/2008 – 8/31/2012, Total: \$580,000, (53% responsibility)

NIH, R03 Grant, (R03LM009646-01) (PI, 2nd PI: Cendan)

Immersive Virtual Patients with Abnormal Clinical Conditions for Medical Student Training

8/15/2008 – 8/14/2010, Total: \$137,014, (86% responsibility)

Association of Surgical Education, CESERT Grant, (Consultant, PI: Lind)

The Use of a Virtual Character-Enhanced Simulator to Teach and Assess Breast History and Examination Skills

7/1/2008 – 6/30/2010, Total: \$78,000 (4% responsibility)

NSF, Career Award, (IIS-0643557) (PI)

Studying Diversity Issues with Immersive Virtual Humans

8/1/2007 – 7/31/2012, \$405,695

NSF, Research Experience for Undergraduates, (IIS-0733800) (PI)

Studying Diversity Issues with Immersive Virtual Humans

8/1/2007 – 7/31/2008, \$12,000

Medical College of Georgia Contract (PI)

Virtual Humans to Teach Medical Communication Skills
3/1/2007 – 5/31/2008, \$59,000

Completed

Keele University Contract (PI)

Virtual Humans to Teach Pharmacy Communication Skills
4/1/2007 – 6/30/2007, \$56,000

NSF CCF-0713983 (PI)

CPA (Gr&Vis): Student Panel at IEEE Virtual Reality 2007 Conference
3/1/2007 – 4/1/2007, \$4725

Internal Grants (\$21,000)

2005 College of Public Health and Health Professions Contract

Contract from Professor Michael Robinson on Virtual Humans for Pain Studies
2005, \$3,240

2004 College of Medicine Education Center Grant (Co-PI, PI: Stevens, Lind)

A Pilot Study to Examine the Use of Virtual Patient and Instructor in Teaching Medical Students Communication Skills using an Abdominal pain Scenario
6/1/2004-12/31/2004, \$4,900

2004 Professor Sumi Helal Contract

Distance Dining
2004, \$10,240

PUBLICATIONS

* - UF graduate student supervised

** - UF undergraduate student supervised

*** - graduate student supervised while a post-doc.

AR – Acceptance Rate reported when known

Peer-Reviewed Journal Articles

1. Quarles, J.*, Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "A Mixed Reality Approach for Interactively Blending Dynamic Models with Corresponding Physical Phenomena" (accepted 2009) *ACM Transactions on Modeling and Computer Simulation*.
2. Quarles, J.*, Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "Scaffolded Learning with Mixed Reality" (accepted) *Computers and Graphics: Special Issue on Virtual Reality*.
3. Kotranza, A.*, **Lok, B.**, Deladisma, A., Pugh, C.M., and D. S. Lind, "Mixed Reality Humans: Evaluating Behavior, Usability, and Acceptability," (accepted) *IEEE Transactions on Visualization and Computer Graphics*. July/August 2009.
4. Deladisma, A., Gupta, M., Kotranza, A., Bittner, B., Imam, T., Swinson, D., Gucwa, A., Nesbit, R., **Lok, B.**, Pugh, C., and D. Lind (2008). "A Pilot Study to Integrate an Immersive Virtual Patient with a Breast Complaint and Breast Exam Simulator into a Surgery Clerkship", (accepted) *American Journal of Surgery*.
5. Ferdig, R., Coutts, J., DiPietro, J., **Lok, B.**, and Davis, N (2007). "Innovative Technologies for Multicultural Education Needs", *Multicultural Education and Technology Journal*, 1(1), 47-63.
6. Raij, A.*, Johnsen, K.*, Dickerson, R.**, **Lok, B.**, Cohen, M., Duerson, M., Pauley, R., Stevens, A., Wagner, P., and D. Lind (2007). "Comparing Interpersonal Interactions with a Virtual Human to those with a Real Human," *IEEE Transactions on Visualization and Computer Graphics*, Vol .13, No. 3, May/June 2007, 443-457.
7. Deladisma, A., Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C., Schumacher, L., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Wells, R.*, Duerson, M., Harper, J., and D. Lind (2006). "Do

- Medical Students Respond Empathetically to a Virtual Patient?" *The American Journal of Surgery*, Vol 193, Issue 6, 2007, 756-760.
8. **Lok, B.**, Ferdig, R., Raij, A. *, Johnsen, K. *, Dickerson, R. **, Coutts, J., Stevens, A., and D. Lind (2007) "Applying Virtual Reality in Medical Communication Education: Current Findings and Potential Teaching and Learning Benefits of Immersive Virtual Patients", *Journal of Virtual Reality*, Spring London, Vol. 10, No. 3-4, 185-195.
 9. **Lok, B.** (2006). "Teaching Communication Skills with Virtual Humans" (Invited Article) *IEEE Computer Graphics and Applications*, Vol 26, No. 3, 10-13.
 10. Johnsen, K. *, Dickerson, R. **, Raij, A. *, Harrison, C. *, **Lok, B.**, Stevens, A., and D. Lind. (2005). "Using Immersive Virtual Characters to Educate Medical Communication Skills," *Journal on Presence: Teleoperators and Virtual Environments*, Vol 15, No. 1, 33-46.
 11. Stevens, A., Hernandez, J., Johnsen, K. *, Dickerson, R. **, Raij, A. *, Harrison, C. *, DiPietro, M., Allen, B., Ferdig, R., Foti, S., Jackson, J., Shin, M., Cendan, J., Watson, R., Duerson, M., **Lok, B.**, Cohen, M., Wagner, P., and D. Lind (2005). "The Use of Virtual Patients to Teach Medical Students Communication Skills." *The American Journal of Surgery*, Jun; 191(6):806-811.
 12. Zambaka, C., **Lok, B.**, Babu, S., Xiao, D., Ulinski, A. and L. Hodges (2005). "Path Visualizations and Cognition in Virtual Environments," *IEEE Transactions on Visualization and Computer Graphics*, 11.6: 694-705.
 13. **Lok, B.** (2004). "Towards Merging Real and Virtual Spaces," *Communications of the ACM*, August 2004, 47.8: 48-53.
 14. **Lok, B.**, Naik, S., Whitton, M., and F. Brooks (2003). "Effects of Interaction Modality and Avatar Fidelity on Task Performance and Sense of Presence in Virtual Environments," *Journal on Presence: Teleoperators and Virtual Environments*, Vol. 12, No. 6, 615-628.

Peer-Reviewed Conference Articles

ACM I3D (2003, 2001), **ISMAR**: (2008, 2005), **SIGCHI** (2007), **VRST** (2007), **IVA** (2008, 2008)
IEEE 3DUI (2009, 2008, 2005, 2004), **VR** (2009, 2009, 2008, 2008, 2008, 2008, 2006, 2005, 2004, 2003)
Medicine Meets Virtual Reality (2008, 2006)

1. Kotranza, A., Pugh, C., Lind, D., and B. **Lok**. "Virtual Humans That Touch Back: Enhancing Nonverbal Communication with Virtual Humans through Bidirectional Touch" In *Proceedings of IEEE Symposium on 3D User Interfaces 2009*. Lafayette, LA, March 14-15, 2009, pp. 23-30.
2. Kotranza, A., Lok, B., Pugh, C., and D. Lind, "Virtual Humans That Touch Back: Enhancing Nonverbal Communication with Virtual Humans through Bidirectional Touch," (short paper) In *Proceedings of IEEE Virtual Reality 2009*. Lafayette, LA, March 14-18, 2009, pp. 175-178.
3. Raij, A., Kotranza, A., Lind, D., and B. **Lok**. "Virtual Experiences for Social Perspective Taking" (short paper) *Proceedings of IEEE Virtual Reality 2009*. Lafayette, LA, March 14-18, 2009, pp. 99-102.
4. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "A Mixed Reality System for Enabling Collocated After Action Review" *7th IEEE and ACM International Symposium on Mixed and Augmented Reality - ISMAR 2008*, Sept 15-18, Cambridge, UK, 107-116. (AR: 23.7%)
5. Rossen, B. *, Johnsen, K. *, Deladisma, A., Lind, D., and **B. Lok**. "Virtual Humans Elicit Skin-Tone Bias Consistent with Real-World Skin-Tone Biases" (short paper) *Intelligent Virtual Agents 2008*, Sept. 1-3, Tokyo, JP, 237-244.
6. Rodriguez, H., **Lok, B.**, Lind, D., and D. Beck, "Audio Analysis of Human/Virtual-Human Interaction" (short paper) *Intelligent Virtual Agents 2008*, Sept. 1-3, Tokyo, JP, 154-161.
7. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "Tangible User Interfaces Compensate for Low Spatial Cognition" *IEEE 3D User Interfaces 2008*, March 8-9, Reno, NV, 11-18. (AR: 28.3%)
8. Kotranza, A. *, Deladisma, A., Lind, D., Pugh, C., and **B. Lok**, "Virtual Human + Tangible Interface = Mixed Reality Human. An Initial Exploration with a Virtual Breast Exam Patient." *IEEE Virtual Reality 2008*, March 10-12, Reno, NV., 99-106. **Best Paper, IEEE Virtual Reality 2008**. (AR: 26.1%)

9. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "Mixed Reality Merges Abstract and Concrete Knowledge" *IEEE Virtual Reality 2008*, March 10-12, Reno, NV, 27-34. (AR: 26.1%)
10. Raij, A.*, and **B. Lok** "IPSVIZ: An After-Action Review Tool for Human-Virtual Human Experiences" *IEEE Virtual Reality 2008*, March 10-12, Reno, NV, 91-98. (AR: 26.1%)
11. Johnsen, K.* and **B. Lok**. An Evaluation of Immersive Displays for Virtual Human Experiences. *IEEE Virtual Reality 2008*, (short paper) March 10-12, Reno, NV, 133-136. (AR: 26.1%)
12. Deladisma, A., Johnsen, K.*, Raij, A.*, Rossen, B.*, Kotranza, A.*, Kalapurakal, M., Szlam, S., Bittner, J., Sinwson, D., **Lok, B.**, and D. Lind (2008). Medical student satisfaction using a virtual patient system to learn history-taking and communication skills. *Student Health Technology Information*, 2008, 132:101-105.
13. Johnsen, K.*, Raij, A.*, Stevens, A., D. Lind and **B. Lok** (2007). "The Validity of a Virtual Human Experience for Interpersonal Skills Education" in *SIGCHI conference on Human Factors in Computing Systems*, ACM Press, New York, NY, 2007, 1049-1058. (AR: 25%)
14. Kotranza, A.*, Quarels, J., Wang, X., and **B. Lok** (2006). "Mixed Reality: Are Two Hands Better Than One?" (short paper) *ACM Symposium on Virtual Reality Software and Technology (VRST) 2006*, Nov. 1-3, Limassol, Cyprus, 31-34. (AR: 52% including short papers)
15. Raij, A., Johnsen, K., Dickerson, R.**, **Lok, B.**, Cohen, M., Stevens, A., Bernard, T., Oxendine, C., Wagner, P., Lind, D (2006). "Interpersonal Scenarios: Virtual \approx Real?" *IEEE Virtual Reality 2006*, 59-66. (AR: 26%)
16. Dickerson, R.**, Johnsen, K.*, Raij, A.*, **Lok, B.**, Stevens, A., Bernard, T., and D. Lind (2006). "Virtual Patients: Assessment of Synthesized Versus Recorded Speech," *Medicine Meets Virtual Reality 14*, 114-119.
17. Wang, X., Kotranza, A.*, Quarels, J., **Lok, B.**, and D. Allen (2005). "A Pipeline for Rapidly Incorporating Real Objects into a Mixed Environment," *4th IEEE and ACM International Symposium on Mixed and Augmented Reality*, Vienna, Austria, 170-173.
18. Wang, X., Kotranza, A.*, Quarels, J., **Lok, B.**, and D. Allen (2005). "Rapidly Incorporating Real Objects for Evaluation of Engineering Designs in a Mixed Reality Environment," *New Directions in 3D User Interfaces Workshop, IEEE Virtual Reality 2005*, Bonn, Germany, 170-173.
19. Dickerson, R.**, Johnsen, K.*, Raij, A.*, **Lok, B.**, Hernandez, J., Stevens, A., and D. Lind. (2005). "Evaluating a Script-Based Approach to Simulating Patient-Doctor Interaction," *SCS 2005 International Conference on Human-Computer Interface Advances for Modeling and Simulating (SIMCHI '05)*, 79-84.
20. Johnsen, K.*, Dickerson, R.**, Raij, A.*, **Lok, B.**, Jackson, J., Shin, M., Hernandez, J., Stevens, A., and D. Lind. "Experiences in Using Immersive Virtual Characters to Educate Medical Communication Skills," *IEEE Virtual Reality 2005*, Bonn, Germany, March 2005, 179-186. (AR: 26%)
21. Whitton, M., **Lok, B.**, Insko, B., and F. Brooks (2005). "Integrating Real and Virtual Objects" (Invited Paper) *1st International Conference on Virtual Reality 2005*, Las Vegas, NV July 22-27, 2005.
22. Zambaka, C., **Lok, B.**, Goolkasian, P., and L. Hodges (2005). "Lessons Learned in Virtual Human Research" (Invited Paper) *1st International Conference on Virtual Reality 2005*, Las Vegas, NV July 22-27, 2005.
23. **Lok, B.**, Naik, S., Whitton, M., and F. Brooks (2004). "Experiences in Extemporaneous Incorporation of Real Objects in Immersive Virtual Environments," *Beyond Glove and Wand Based Interaction Workshop, IEEE Virtual Reality 2004*, Chicago, IL, 107-110.
24. Zambaka, C., **Lok, B.**, Babu, S., Xiao, D., Ulinski, A. and L. Hodges (2004). "Effects of Travel Technique on Cognition in Virtual Environments," *IEEE Virtual Reality 2004*, Chicago, IL, 149-156, 286.
25. **Lok, B.**, Naik, S., Whitton, M., and F. Brooks (2003). "Incorporating Dynamic Real Objects into Virtual Environments," *ACM SIGGRAPH 2003*, 701. (Abridged version of *ACM 2003 Symposium on Interactive 3D Graphics* paper, one of three selected for representation)
26. **Lok, B.**, Naik, S., Whitton, M., and F. Brooks (2003). "Incorporating Dynamic Real Objects into Virtual Environments," *ACM 2003 Symposium on Interactive 3D Graphics*, Monterey, CA (April 28-30), ACM SIGGRAPH: 31-41. Images in *Communications of the ACM*, July 2003, 46.7: 48.

27. **Lok, B.**, Naik, S., Whitton, M., and F. Brooks (2003). "Effects of Handling Real Objects and Avatar Fidelity on Cognitive Task Performance in Virtual Environments," *IEEE Virtual Reality 2003*, Los Angeles, CA (March 22-26), IEEE: 125-132.
28. Mortensen, J., Vinayagamoorthy, V., Slater, M., Steed, A., **Lok, B.**, and M. Whitton (2002), "Collaboration in Tele-Immersive Environments," *Eighth Eurographics Workshop on Virtual Environments 2002*, Barcelona, Spain, May 2002: 30-31.
29. **Lok, B.** (2001). "Online Model Reconstruction for Interactive Virtual Environments," *ACM 2001 Symposium on Interactive 3D Graphics*, Chapel Hill, NC (March 19-21): 69-72, 248.
30. **Lok, B.**, Bauer, S., Monacello, C., Finnerty, S., and S. Sheno (1997). "An Organizational Framework for Distributed Medical Information," *Third Joint Conference on Information Systems '97*, 50-51.
31. **Lok, B.**, Bauer, S., Monacello, C., Finnerty, S., and S. Sheno (1997). "A Hypermedia System for Breast Cancer Screening," *Mid-America Symposium of Emerging Computing Technologies*.

Magazine and Book Chapters/Articles/Editorships

1. Lind, D. and **B. Lok** (2006). The Role of Virtual Patients in Medical Education: Teaching Tool Versus Technological Trend. (Invited Article) *Focus on Surgical Education* 2006. 23(1), 28-29.
2. *Proceedings of the 2005 SCS Human-Computer Interface Advances for Modeling and Simulation (SIMCHI '05)* (2005) Eds. Fishwick, P. and **B. Lok**, 2005.
3. **Lok, B.** (2004). "Human Computer Interaction in Three Dimensional Computer Graphics." *Encyclopedia of Human Computer Interaction*. Ed. William Bainbridge. Barrington, MA: Berkshire, 2004.
4. **Lok, B.** and L. Hodges (2004). "Human Computer Interaction in Virtual Reality." *Encyclopedia of Human Computer Interaction*. Ed. William Bainbridge. Barrington, MA: Berkshire, 2004.
5. **Lok, B.** (2003). "Evaluation and Application of Algorithms for a Hybrid Environment System." *Energy, Simulation Training, Ocean Engineering and Instrumentation, Research Papers of the Link Foundation Fellows*. Ed. Brian Thompson. New York: University of Rochester Press, 2003, 3:149-175.

Abstracts/Poster/Presentations

1. Gucwa, A., Kotranza, A., Raij, A., Rossen, B., Beatty, J., Laserno, C., Park, M., Pugh, C., Lok, B., Johsen, K., and D. Lind. "The Use of a Mixed Reality Breast Simulator with an Innovative Feedback System (Touch Map) to Enhance Breast Examination Skills," *Association for Surgical Education Annual Meeting 2009*, Salt Lake City. April 28th - April 30th 2009.
2. Gucwa, A., Beatty, J., Deladisma, A., Kotranza, A., Raij, A., Shah, H., Fox, P., Gehlot, A., Kruse, E., McLoughlin, J., Lok, B., Pugh, C., and D. Lind. "A Pilot Study to Evaluate the Use of Mixed Reality technology as a Tool for Assessing Medical Students' Communication Skills", *9th Annual International Meeting on Simulation in Healthcare (IMSH)*, Lake Buena Vista, FL. January 10-14, 2009.
3. Gucwa, A., Beatty, J., Kotranza, A., Rossen, B., Pugh, C., **Lok, B.**, and D. Lind "Gender Differences Among Students Undergoing a Mixed Reality Simulation in Breast History-Taking and Physical Examination" Presented at the *Association of Women Surgeons 2008*.
4. Deladisma, A., Imam, T., Kotranza, A.*, Raij, A.*, Bittner, J., **Lok, B.**, Pugh, C., and D. Lind. "The Use of Mixed Reality Humans to Teach Clinical Skills" to be presented at *47th Annual Conference on Research in Medical Education (RIME)*, October 31-November 5th, 2008, San Antonio, TX.
5. Cendan, J., Miller, B., Wang, X.*, Horton, J.**, and **B. Lok**. "Development of Virtual Patient with Fixed Cranial Nerve Pathology." *Southern Group on Education Affairs 2008*, April 3-5, Nashville, TN.
6. Craig, J., Deladisma, A., Gupta, M., Bittner, J., Johnsen, K.*, **Lok, B.**, and D. Lind. "Novel Integration of a Life-Sized, Immersive Virtual Instructor with a Mannequin-Based Procedural Simulator to Teach Central Venous Catheterization." *8th Annual International Meeting on Simulation in Healthcare*. San Diego, CA. Jan 13-16, 2008.
7. Gupta, M., Deladisma, A., Kotranza, A.*, Craig, J., Bittner, J., Johnsen, K.*, **Lok, B.**, and D. Lind. "The Use of a Virtual Character-Enhanced Simulator to Teach Breast History and Examination Skills." *8th Annual International Meeting on Simulation in Healthcare*. San Diego, CA. Jan 13-16, 2008.
8. Deladisma, A., Gupta, M., Kotranza, A.*, Bittner, J., Imam, T., Swinson, D., Nesbit, R., **Lok, B.**, Pugh, C., D. Lind. "A Pilot Study to Integrate an Immersive Virtual Patient with a Breast Complaint and Breast Exam

- Simulator into a Medical Student Surgery Clerkship." *Association for Surgical Education, Surgical Education Week 2008*.
9. Davenport, R., Mann, W., Lutz, B., Shaw, L., and **Lok, B.**, Perceived personal robotic technology needs among elders with mobility impairments, *International Conference on Aging, Disability and Independence (ICADI)*, St. Petersburg, Florida, Feb 21-23, 2008.
 10. Mack, D., Deladisma, A., Bernard, T., Oxendine, C., **Lok, B.**, and D. Lind. "Virtual Patients Reduce Anxiety and Enhance Learning when Teaching Medical Student Sexual-History Taking Skills", *Society for Simulation in Healthcare. (Research Abstract Award 2nd place Education)*
 11. Deladisma, A., Mack, D., Bernard, T., Oxendine, C. Szlam, S., Wagner, P., Kruse, E., **Lok, B.**, and D. Lind. "Virtual Patients Reduce Anxiety and Enhance Learning when Teaching Medical Student Sexual-History Taking Skills", *Association for Surgical Education 2007 Surgical Education Week. (Same as Mack et al. 07 abstract)*
 12. Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C. Schumacher, L., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Ross, R. Duerson, M., Parimala, J., and D. Lind. "How Comparable are Medical Student Empathetic Interactions in a Similar Virtual Patient/Standardized Patient Abdominal Pain Scenario?" *Southern Group on Education Affairs 2006*.
 13. Bernard, T., Stevens, A., Wagner, P., Bernard, N., Schumacher, L., Johnsen, K.*, Dickerson, R.**, Raij, A.*, **Lok, B.**, Duerson, M., Cohen, M. and D. Lind. "A Multi-Institutional Pilot Study to Evaluate the Use of Virtual Patients to Teach Health Professions Students History-Taking and Communication Skills." *Society of Medical Simulation Meeting 2006*, Vol. 1, No. 2, 1-2. (Ranked #1 out of 104 accepted)
 14. Deladisma, A., Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C., Schumacher, L., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Wells, R.*, Duerson, M., Harper, J., and D. Lind. "Is There a Difference in the Empathetic Response of Health Professions to Standardize Patients and Virtual Patients?" *Association of Surgical Education 2006. (Clinical Research Award 2nd place, same as ASE abstract)*
 15. Stevens, A., Cohen, M., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Wells, R.*, Oxendine, C., Wagner, P., Bernard, T., Cendan, J., Duerson, M., Pauly, R., **Lok, B.**, and D. Lind, "Implementing a Virtual Patient (VP) into the Medical School Curriculum at the University of Florida (UF) " *Southern Group on Education Affairs 2006*.
 16. Stevens, A., Hernandez, J., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Jackson, J., Shin, M., Cendan, J., Duerson, M., **Lok, B.**, and D. Lind (2005). The Use of Virtual Patients to Teach Medical Students Communication Skills. *Association of Surgical Education 2005*.
 17. Babu, S.***, Zambaka, C.***, Jackson, J., Chung, T., **Lok, B.**, Shin, M., and L. Hodges. Virtual Human Physiotherapist Framework for Personalized Training and Rehabilitation (poster). *Graphics Interface 2005*, Victoria, British Columbia, Canada, May 9-11, 2005.
 18. Stevens, A., Hernandez, J., Johnsen, K.*, Dickerson, R.**, Raij, A.*, Jackson, J., Shin, M., Cendan, J., Duerson, M., **Lok, B.**, and D. Lind (2005). The Use of Virtual Patients to Teach Medical Students Communication Skills. *Southern Group on Education Affairs 2005. (Ranked #1)*

Dissertation

Lok, B. (2002). Interacting with Dynamic Real Objects in Virtual Environments. Ph.D. Dissertation, Department of Computer Science, University of North Carolina at Chapel Hill.

SERVICE and ACTIVITIES

- **Steering Committee:**
 - IEEE Virtual Reality (2009-present)
- **Program Chair:**
 - IEEE Virtual Reality 2010 (Boston, MA)
 - ACM Symposium on Virtual Reality Software and Technology 2009 (Kyoto, Japan)
 - GameOn North America '07 (Gainesville, FL)
 - Human-Computer Interaction Advances in Modeling and Simulation - Society for Computer Simulation Western Multiconference 2005 (New Orleans, LA)
- **Program Committee:**

- IEEE Virtual Reality (2003-2010)
- IEEE ISMAR (2004-2006, 2008-2009)
- International Conference on Intelligent Virtual Agents (IVA) (2009-2010)
- ACM Symposium on Virtual Reality Software and Technology (2007-2010)
- INTUITION Workshop & Conference on Virtual Reality and Virtual Environments (2007-2008)
- Visual Learning Conference (2007-2009)
- Eurographics Symposium on Virtual Environments (2007)
- International Symposium on Visual Computing (2007-2009)
- **Panels Chair:** IEEE Virtual Reality 2007
- **Videos Chair:** IEEE Virtual Reality 2009
- **Posters Chair:** IEEE ISMAR 2006, ACM VRST 2007, IEEE Virtual Reality 2010
- **Tutorials Chair:** IEEE Virtual Reality 2006
- **Session Chair:** IEEE Virtual Reality (2007-2004), WMC SIMCHI 2005
- **Best Paper Award Committee:** IEEE Virtual Reality (2004-2005)
- **Conference Reviewer:** (In addition to the above conferences), SIGGRAPH (2008), Eurographics Symposium on Virtual Environments, IEEE Visualization, Pacific Graphics
- **Journal Reviewer:**
 - Journal on Presence: Teleoperators and Virtual Environments
 - Journal on Graphics Tools
 - IEEE Transactions on Computer Graphics and Visualization
 - International Journal of Human-Computer Studies (2008, 2009)
 - Journal of Virtual Reality and Broadcasting (2008)
- **Book Reviewer:** McGraw-Hill Publishing, Cambridge University Press
- **Proposal Review Panels:** National Science Foundation (2004, 2007 twice, 2008, 2009)
- **Invited Panels:**
 - Avatar/Virtual Human Workshop – Department of Defense, Marina Del Ray, California, April, 2009. (One of two groups invited from academia)
 - Virtual Worlds and Virtual Humans – *France-US Frontiers of Science Symposium, National Academy of Science*, Roscoff, France, November, 2008
 - OSCEs and Virtual Patient Simulations in Pharmacy Education: International Experiences and Research Findings – *2008 Joint American Association on College of Pharmacy/ Association of Faculties of Pharmacy in Canada Annual Meeting*, Chicago, IL, July 22, 2008.
 - Medical and Healthcare Simulation Future Mapping Session – *National Center of Simulation*, Orlando, FL, May, 2008
 - User Studies in VR: What Can We Learn From Them and What Are They Good For? - *IEEE Virtual Reality 2008*, March, 2008
 - Student Panel: Building the Future of and a Career in VR - *IEEE Virtual Reality 2007*, March 2007
 - VR Support of Clinical Applications: Collaboration, Politics, & Ethics - *IEEE Virtual Reality 2007*, March, 2007
 - Bridging Simulation and HCI – *SIMCHI '05*, January 2006

TEACHING

University of Florida

- Fall 2009: Human Computer Interaction (CAP6930/4930)*
- Spring 2009: Virtual Environments (CAP6930/4930) (7 Undergrad/Grad)*
- Fall 2008: Human Computer Interaction (CAP6930/4930) (37 Undergrad/Grad)*
- Spring 2008: Computational Structures in Computer Graphics (CAP4730), (38 Undergraduates)*
- Fall 2007: Virtual Environments (4 university course) (CAP6930/4930) (4 Undergrad/Grad)*
- Fall 2007: Human Computer Interaction (CAP6930/4930) (15 Undergrad/Grad)*
- Spring 2007: Advanced Computer Graphics and Virtual Environments (CAP6930/4930) (5 Grad)*
- Fall 2006: Human Computer Interaction (CAP6930/4930) (9 Grad)*
- Spring 2006: Computational Structures in Computer Graphics (CAP4730), (46 Undergraduates)*
- Fall 2005: Design and Creation of Virtual Environments (CIS6930/4930), (19 Undergrad/Grad)*
- Spring 2005: Computational Structures in Computer Graphics (CAP4730), (51 Undergraduates)*

Fall 2004: **Human Computer Interaction** (CAP6930/4930), (21 Undergrad/Grad)

Spring 2004: **Computational Structures in Computer Graphics** (CAP4730), (55 Undergraduates)

Fall 2003: **Design and Creation of Virtual Environments** (CIS6930/4930), (19 Undergrad/Grad)

University of North Carolina at Charlotte

Spring 2003: **Design and Analysis of Algorithms** (ITCS2215), (40 Undergraduates)

University of North Carolina at Chapel Hill

Fall 2000: **Introduction to Computer Graphics** (COMP136), (12 Undergrad/Grad)

OTHER WORK

Invited Short Course

Virtual Environments, Jaypee Institute of Information Technology, New Delhi, India, March 24th-28th, 2008.

Invited Talks

2008

Kavli France-US Frontiers of Science Symposium, *National Academy of Science*, "Immersive Virtual Humans for Interpersonal Skills Training", Roscoff, France, (November)

Tulsa Undergraduate Research Challenge, *University of Tulsa*, "Immersive Virtual Humans for Interpersonal Skills Training" (July)

Northwestern University, "Immersive Virtual Humans for Interpersonal Skills Training" (July)

*Simulation Faculty Learning Community Seminars, "Immersive Virtual Humans for Interpersonal Skills Training" (June)

Virtual Realities Dagstuhl Seminar, Schloss Dagstuhl (Germany), "Immersive Virtual Humans for Interpersonal Skills Training" (June)

2007

Department Seminar, *University of Georgia*, "Virtual Humans for Interpersonal Skills Training" (December)

*Education Grand Rounds, *Medical College of Georgia*, "Virtual Humans for Interpersonal Skills Training" (December)

Invited Lecture Series, *Medical College of Georgia*, "Virtual Humans for Interpersonal Skills Training" (November)

Department of Computer Science Lecture Series, *University of Central Florida*, "Virtual Humans for Interpersonal Skills Training" (November)

*Department of Computer Science Lecture Series, *Auburn University*, "Virtual Humans for Interpersonal Skills Training" (October)

*First Fridays Lecture Series, Sigma Xi Honor Society, "Virtual Humans for Interpersonal Skills Training" (September)

*Institute of Creative Technologies, *University of Southern California*, "Virtual Humans for Interpersonal Skills Training" (August)

College of Medicine, *University of Southern California*, "Virtual Humans for Interpersonal Skills Training" (August)

*Pain Research Forum, Department of Health and Human Performance, "Virtual Humans Research" (April)

*Cognitive Forum, Department of Psychology, "Virtual Humans Research" (April)

2005

Graduate Computer Science Colloquium Series, "Natural Interaction with Virtual Characters and Environment", *University of North Carolina at Charlotte* (November).

Computer Science Colloquium Series, "Natural Interaction with Virtual Characters and Environment", *University of North Carolina at Chapel Hill* (November).

*Computer Science Colloquium Series, "Natural Interaction with Virtual Characters and Environment", Old Dominion University (October).

*Geriatric Education Group, "Virtual Interactive Patients" (March)

*Association of Digital Art and Media, "Interactive Computer Graphics, Human-Computer Interaction, and Virtual Reality and Digital Arts and Sciences" (March)

Vision Imaging and Virtual Environments Research Group, *University of College London*, "Experiences with Virtual Character and Environment Natural Interaction" (March)

2004

Virginia Tech Virtual Environments Research Group, *Virginia Polytechnic University*, "Naturally Interacting with Virtual Characters and Virtual Environments", (November)

*School of Education Human-Computer Interaction Course, "Human-Computer Interaction, a Computer Science Perspective" (October)

*Center for Learning and Simulation, "Immersive Virtual Characters for Educating Medical Communication Skills," (October)

*Introduction to Digital Arts and Science Course, "Interactive Computer Graphics, Human-Computer Interaction, and Virtual Reality and Digital Arts and Sciences" (October)

*Center for Neurological Science, "Limb Rehabilitation using Virtual Humans" (June)

*Medical Educational Grand Rounds, "Virtual Characters in Medical Education" (September)

Florida Research Consortium, *Technology Transfer Consortium 2004*, "Virtual Characters and Medical Diagnosis Training" (May)

*Gainesville VA Hospital, Brain Rehabilitation Research Center "Virtual Reality and its Applications to Rehabilitation" (April)

Center for Information Security, *University of Tulsa*, "Virtual Environments and Virtual Reality, Research of the Virtual Experiences Group at the University of Florida" (March)

*Tulsa Undergraduate Research Challenge Reception, *University of Tulsa*, "Importance of Undergraduate Research Opportunities in Academic Careers" (March)

2003

Human-Interface Laboratory, *University of Washington*, "Virtual Characters and Environments, New Modalities in Human Computer Interaction" (October)

*G2V2, University of Florida, "Virtual Characters and Environments, New Modalities in Human Computer Interaction" (September)

†- Financially supported invited talks, *-University of Florida talks

Popular Press

(2008) *Cnn.com, Gainesville Sun, Independent Florida Alligator*

(2007) *Augusta Chronicle*

(2005) "Virtual Patients," *Dennis Miller Show (MSNBC), KBCD NewsChannel 11 - Lubbock, Texas. Channel 5 - Chicago, IL, News Channel - West Palm Beach, FL, CliniCum, Calgary Herald, National Post (Canada), Vancouver Sun, Ottawa Citizen, Edmonton Journal, University of Florida News, Science Daily, Roland Piquepaille's Technology Trends, ACM TechNews | Tech-Community, Mirabilis.ca, NewsTrove.com.*

(2004) "Simulated Patients Teach Real Diagnosis Skills," Ed. Martha Dobson, *Florida Engineer*, Fall 2004.

(2003) "VR Accommodates Reality," Ed. Eric Smalley, *Technology Research News*, July/August 2003.

(2001) "Avatar Advances," Ed. Diane Mahoney. *Computer Graphics World*, February 2001, 24.2: 17-20.

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