

College of Engineering and Science

RESUME – Sabarish V. Babu

PERSONAL DATA

Assistant Professor
Division of Human Centered Computing
School of Computing
306 McAdams Hall
Clemson University
Clemson, SC 29634
864-656-5089

November 26, 1975
Trichy, India
India (USA Permanent Resident)

EDUCATION

Ph.D., University of North Carolina at Charlotte, 2007, Computer Science

M.S., University of North Carolina at Charlotte, 2002, Information Technology

B.S., University of North Carolina at Charlotte, 2000, Biology (Concentration Microbiology)

PROFESSIONAL EXPERIENCE

Clemson University, 2010-Present, Assistant Professor, School of Computing

University of Iowa, 2008-2009, Assistant Research Scientist, Department of Computer Science

University of Iowa, 2007-2008, Post-Doctoral Research Fellow, Department of Computer Science

MEMBERSHIPS

Member, Association of Computing Machinery, ACM (2008-Present)

Member, Institute of Electrical and Electronics Engineers, IEEE (2008-Present)

Member, Phi Beta Delta – Honor Society for International Scholars, (2005-Present)

PROFESSIONAL ACTIVITIES

General Chair, IEEE Virtual Reality Conference 2016
Program Committee, IEEE Virtual Reality Conference 2014, 2015
Program Committee, IEEE 3D User Interfaces Conference 2014, 2015
Program Committee, International Conference on Intelligent Virtual Agents (IVA) 2013
Program Committee, Joint ICAT – EuroVR – EGVE Conference on Virtual Reality 2009, 2010, 2011
Conference Committee – Publicity Co-Chair, IEEE 3D User Interfaces Conference 2014, 2015
Conference Committee – Posters Co-Chair, IEEE Virtual Reality Conference 2014, 2015
Conference Committee - Workshops Co-Chair, IEEE Virtual Reality Conference 2013, Orlando, Florida
Conference Committee - Student Volunteers Co-Chair, IEEE Virtual Reality Conference 2010, Boston, Massachusetts
Conference Committee - Exhibits Co-chair, IEEE Virtual Reality Conference 2008, Reno, Nevada
Conference Committee - Local Arrangements & Exhibits Co-Chair, IEEE Virtual Reality Conference, Charlotte, NC, 2007
Reviewer, Interacting with Computers Journal 2013
Reviewer, International Journal on Human-Computer Studies (IJHCS), 2009 – 2013
Reviewer, Joint ICAT – EuroVR – EGVE Conference on Virtual Reality, 2009, 2010, 2011, 2013
Reviewer, ACM Special Interest Group on Human-Computer Interaction (SigCHI), 2009, 2012
Reviewer, IEEE Symposium on 3D User Interfaces, 2008, 2009, 2013
Reviewer, IEEE Virtual Reality Conference 2008, 2009, 2013
Reviewer, IEEE Transactions on Image Processing 2006
Reviewer, IEEE Transactions on Visualization and Computer Graphics 2005 - 2012

PUBLICATIONS

Refereed Journal Publications

- [1] Daily, S.B., Leonard, A.E., Jörg, Babu, S.V., Gunderson, K., Parmar, D. (in review) “Embodying Computational Thinking: Initial Design of an Emerging Technological Learning Tool”, in submission to the *Journal on Technology, Knowledge and Learning*.
- [2] Wu, Y., Babu, S.V., Arm strong, R., Bertrand, J.W., Luo, J., Roy, T., Daily, S.B., Dukes, L.C., Hodges, L.F., and Fasolino, T. (2014) “Effects of Virtual Human Animation on Emotion Contagion in Simulated Inter-

Personal Experiences”, in the *IEEE Transactions on Visualization and Computer Graphics*, Vol. 20(4), p. 626-635.

[3] Napieralski, P.E., Hu, J., Fadel, G., and Babu, S.V. (2013). “An Evaluation of Immersive Viewing on Spatial Knowledge Acquisition in Spherical Panoramic Environments”, in the *Springer Journal of Virtual Reality (VIRE)*, p. 1-13.

[4] Babu, S.V., Suma, E., Hodges, L.F., and Barnes, T. (2011). “Learning Cultural Conversational Protocols with Immersive Interactive Virtual Humans”, in the *International Journal of Virtual Reality (IJVR)*, Vol. 10(4), p. 25-35.

[5] Napieralski, P.E., Altenhoff, B.M., Bertrand, J.W., Long, L.O., Babu, S.V., Pagano, C.C., Kern, J., and Davis, T.A. (2011). “Near Field Distance Perception in Real and Virtual Environments Using Both Verbal and Action Responses”, in the *ACM Transactions on Applied Perception (ACM TAP)*, Vol. 8, p.18:1 – 18:19.

[6] Babu, S., Grechkin, T., Ziemer, C., Chihak, B., Cremer, J., Kearney, J., and Plumert, J. (2011). “An Immersive Virtual Peer for Studying Social Influences on Child Cyclists’ Road-Crossing Behavior”, in the *IEEE Transactions on Visualization and Computer Graphics*, Vol. 17, p. 14-25.

[7] Chihak, B. J., Plumert, J. M., Ziemer, C. J., Babu, S., Grechkin, T., Cremer, J. F., & Kearney, J. K. (2010). “Synchronizing self and object movement: How child and adult cyclists intercept moving gaps in a virtual environment,” in the *APA Journal on Experimental Psychology*, Vol 36(6), p. 1535-1552.

Prior to Clemson

[8] Suma, E., Finkelstein, S., Reid, M., Babu, S., Ulinski, A., and Hodges, L.F. (2010). "Evaluation of the Cognitive Effects of Travel Technique in Complex Real and Virtual Environments," in the *IEEE Transactions on Visualization and Computer Graphics*, Vol. 16(4), p. 690-702.

[9] Daugherty, B., Babu, S., Cutler, B., and Hodges, L. F. (2008). “Comparison of Virtual Human versus Human Administration of Police Lineups”, in the *IEEE Journal on Computer Graphics and Applications (IEEE CG&A)*, Vol. 28(6), p. 65-75.

[10] Babu, S., Liao, P.-C., Shin, M.C., and Tsap, L.V. (2006). “Recovery and Visualization of 3D Structure of Chromosomes from Tomographic Reconstruction Images,” in *EURASIP Journal on Applied Signal Processing*, vol. 2006, Article ID 45684, 13 pages, 2006.

[11] Zambaka, C., Lok, B., Babu, S., Ulinski, A., Hodges, L. F. (2006). “Comparison of Path Visualizations and Cognitive Measures relative to Travel Technique in a Virtual Environment”, in *IEEE Transactions on Visualization and Computer Graphics* 11. 6. pp. 694-705.

[12] Whitney, S.L., Sparto, P.J., Hodges, L.F., Babu, S.V., Furman, J.M., and Redfern, M.S. (2006) “Responses to a Virtual Reality Grocery Store in Persons with and without Vestibular Dysfunction”, in *Journal on CyberPsychology and Behavior*, Volume 9, Number 2.

Conference Proceedings (Reviewed)

[13] Newsome, N., Chaturvedi, H., Babu, S.V., Luo, J., Ebrahimi, E., Roy, T., Daily, S., and Fasolino, T. (in review). “Comparative Evaluation of Stylized versus Realistic Representation of Virtual Humans on Users’ Emotional Responses in Simulated Interpersonal Experiences”, in submission to the Proceedings of the *IEEE International Conference on Virtual Reality (IEEE VR) 2015*.

[14] Ebrahimi, E., Altenhoff, B., Pagano, C.C., Babu, S.V., and Jones, A.J. (in review). “Effects of Calibration to Visual and Proprioceptive Information on Distance Judgments in an Immersive Virtual Environment”, in submission to the Proceedings of the *IEEE International Conference on Virtual Reality (IEEE VR) 2015*.

[15] Bertrand, J., Brickler, D., Babu, S.V., Luo, J., Madathil, K.C., Wang, T., Wagner, J., Zelaya, M., and Gramopadhye, A.K. (in review). “The Role of Interaction Fidelity on Bimanual Psychomotor Skills Education in Immersive Virtual Environments”, in submission to the Proceedings of the *IEEE International Conference on Virtual Reality (IEEE VR) 2015*.

[16] Duchowski, A.T., Babu, S.V., Bertrand, J., and Krzysztof, K. (2014). “Gaze Analytics Pipeline for Unity3D Integration Signal Filtering and Analysis”, in the Proceedings of the *2nd International Workshop on Eye Tracking for Spatial Research (ET4S) 2014*, p. 7-11, (September 2014).

[17] Ebrahimi, E., Altenhoff, B., Hartman, L., Jones, A.J., Babu, S.V., Pagano, C.C., and Davis, T.A. (2014). “Effects of Visual and Proprioceptive Information in Visuo-Motor Calibration during a Closed-loop Physical Reach Task in Immersive Virtual Environments”, in the Proceedings of the *ACM International Symposium on Applied Perception (ACM SAP) 2014*, p. 103-110, (August 2014).

- [18] Jörg, S., Leonard, A., Babu, S., Gundersen, K., Parmar, D., Boggs, K., and Daily, S.B. (2014). "Character animation and embodiment in teaching computational thinking", in the Proceedings of the *ACM SIGGRAPH 2014 Posters (SIGGRAPH '14)*, Article 4, (August 2014).
- [19] Daily, S.B., Leonard, A., Jörg, S., Babu, S. (2014). "Dancing in Virtual Environments: Exploring Grounded Embodied Pedagogy in Support of Computational Thinking," in Proceedings of the *American Educational Research Association*, Philadelphia, PA. (April 2014)
- [20] Daily, S.D., Leonard, A.E., Jörg, S., Babu, S.V. (2014). "Dancing Alice: Exploring Embodied Pedagogical Strategies for Learning Computational Thinking", in the Proceedings of the *45th ACM Technical Symposium on Computer Science Education (ACM SIGCSE) 2014*, p. 91-96. (March 2014)
- [21] Parmar, D., Bertrand, J., Shannon, B., Babu, S.V., Madathil, K., Zelaya, M., Wang, T., Wagner, J., Frady, K., and Gramopadhye, A.K. (2014) "Interactive Breadboard Activity Simulation (IBAS) for Psychomotor Skills Education in Electrical Circuitry", in the Proceedings of the *IEEE International Symposium on 3D User Interfaces (IEEE 3DUI) 2014*, p. 181-182, (March 2014).
- [22] Bertrand, J., Ebrahimi, E., Wachter, A., Luo, J., Babu, S.V., Duchowski, A.T., Meehan, N., and Gramopadhye, A.K. (2013). "Visual Attention to Wayfinding Aids in Virtual Environments", in the *Proceedings of the 5th Joint Virtual Reality Conference*, Eurographics Association, p. 9-16, (December 2013).
- [23] Dukes, L.C., Bertrand, J., Gupta, M., Armstrong, R., Fasolino, T., Babu, S.V., and Hodges, L.F. (2013). "Empirical Evaluation of Traditional versus Hybrid Interaction Metaphors in a Multitask Healthcare Simulation", RECEIVED BEST PAPER AWARD in the *Proceedings of the IEEE International Conference on Healthcare Informatics (ICHI) 2013*, Philadelphia, PA, p. 1-10, (August 2013).
- [24] Zelaya, M.I., Madathil, K.C., Bertrand, J., Wang, T., Gramopadhye, A.K., Wagner, J.R., and Babu, S.V. (2013). "An Investigation of the Information-Seeking Behaviors of Two-Year College Students Enrolled in Technology Programs", in the *Proceedings of the American Society for Engineering Education (ASEE) 2013*, Paper ID #6797, Atlanta, GA, p. 1-9, (June 2013).
- [25] Wang, T., Wagner, J.R., Madathil, K.C., Zelaya, M.I., Bertrand, J., Frady, K.K., Gramopadhye, A.K., and Babu, S.V. (2013). "Interactive Three Dimensional Visualization Based Engineering Technology

Education – Modeling and Animation”, in the *Proceedings of the American Society for Engineering Education (ASEE) 2013*, Paper ID #6440, Atlanta, GA, p. 1-11, (June 2013).

[26] Bertrand, J., Dukes, L.C., Dukes, P., Ebrahimi, E., Hayes, A., Mack, N., McClendon, J., Parmar, D., Pence, T.B., Shannon, B., Wachter, A., Wu, Y., Babu, S., and Hodges, L.F. (2013). “Serious Games for Training, Rehabilitation, and Workforce Development”, demonstration paper in the *Proceedings of the IEEE International Conference on Virtual Reality 2013*, Orlando, FL, p. 195-196, (March 2013).

[27] Dukes, L.C., Bertrand, J., Gupta, M., Armstrong, R., Fasolino, T., Babu, S.V., and Hodges, L.F. (2013). “Comparing Usability of a Single versus Dual Interaction Metaphor in a Multi-Task Healthcare Simulation”, poster paper in the *Proceedings of the IEEE International Conference on 3D User Interfaces (3DUI) 2013*, Orlando, FL, p. 133-134, (March 2013).

[28] Napieralski, P.E., Altenhoff, B.M., Bertrand, J.W., Long, L.O., Babu, S.V., Pagano, C.P., Davis, T.A., and Fadel, G.M. (2012). “Effects of Immersion on Spatial Updating in Virtual Panoramas”, poster paper in the *Proceedings of the ACM Symposium on Applied Perception (SAP 2012)*, Los Angeles, CA, p. 129, (August, 2012).

[29] Altenhoff, B.M., Napieralski, P.E., Long, L.O., Bertrand, J.W., Pagano, C.C., Babu, S.V., and Davis, T.A. (2012). “Effects of Calibration to Visual and Haptic Feedback on Near-Field Depth Perception in an Immersive Virtual Environment”, in the *Proceedings of the ACM Symposium on Applied Perception (SAP 2012)*, Los Angeles, CA, p. 71-78, (August, 2012).

[30] Bloodworth, T., Cairco, L., McClendon, J., Dukes, P., Dukes, P., Babu, S.V., Ulinski, A., Hodges, L.F., Johnson, A., Meehan, N. (2012). “Initial Evaluation of a Virtual Pediatric System”, in the *Proceedings of the Carolina Women in Computing Conference (CWIC 2012)*, Columbia, SC, (February, 2012).

[31] Cairco, L., Bertrand, J., Gupta, M., Armstrong, R., Hodges, L.F., Fasolino, T.F., and Babu, S.V. “Towards Simulation Training for Nursing Surveillance”, in the *Proceedings of the Carolina Women in Computing Conference (CWIC 2012)*, Columbia, SC, (February, 2012).

[32] Gupta, M., Bertrand, J., Babu, S.V., Polgreen, P., Segre, A. (2012). “An Evolving Multi-Agent Scenario Generation Framework for Simulations in Preventive Medicine Education”, in the *Proceedings of*

the ACM SIGHIT International Conference on Health Informatics 2012, New York, NY, p. 237-246, (February, 2012).

[33] Hu, J., Fadel, M., Wood, I., Napieralski, P., and Babu, S.V. (2011) "Prototyping process of a virtual-reality treadmill system for exploration of real world panoramic environments", in the *Proceedings of the International Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP 2011)*, Leiria, Portugal, p. 699-707, (September, 2011).

[34] Bertrand, J., Babu, S.V., Gupta, M., Segre, A.M., and Polgreen, P. (2011). "A 3D Virtual Reality Hand Hygiene Compliance Training Simulator," in *2011 Annual Scientific Meeting of The Society for Healthcare Epidemiology of America*, Dallas, TX, (April, 2011).

[35] Bertrand, J., Babu, S., Polgreen, P., Segre, A. (2010). "Virtual Agents based Simulation For Training Healthcare Workers in Hand Hygiene Procedures," in *Lecture Notes in Computer Science: Proceedings of the International Conference on Intelligent Virtual Agents 2010*, Philadelphia, PA, p. 125-131, (September, 2010).

Prior to Clemson

[36] Grechkin, T., Babu, S., Ziemer, C., Chihak, B., Cremer, J., Kearney, J., and Plumert, J. (2009). "How does a virtual peer influence children's distance from the roadway when initiating crossing?" in the *Proceedings of the ACM International Symposium on Applied Perception in Graphics and Visualization 2009 (APGV 2009)*, p. 129, Chania, Crete, (August, 2009).

[37] Chihak, B., Pick, H., Plumert, J., Ziemer, C., Babu, S., Cremer, J., and Kearney, J. (2009). "Optic Flow and Physical Effort as Cues for the Perception of the Rate of Self-Produced Motion in VE," in the *Proceedings of the ACM International Symposium on Applied Perception in Graphics and Visualization 2009 (APGV 2009)*, p. 132, Chania, Crete, (August, 2009).

[38] Babu, S., Grechkin, T., Ziemer, C., Chihak, B., Cremer, J., Kearney, J., and Plumert, J. (2009). "A Virtual Peer for Investigating Social Influences on Children's Bicycling," in the *Proceedings of the IEEE International Conference on Virtual Reality 2009*, pp.91-98, Lafayette, LA, (March, 2009).

[39] Cutler, B. L., Daugherty, B., Babu, S., Hodges, L., & Van Wallendael, L. R. (2009). "Creating blind photoarrays using virtual

human technology: A feasibility test.” In the *Police Quarterly*, (July, 2009).

[40] Chihak, B., Babu, S., Grechkin, T., Ziemer, C., Cremer, J., Kearney, J., and Plumert, J. (2008). “How do bicyclists intercept moving gaps in a virtual environment?” in the *Proceedings of the ACM Symposium on Applied Perception in Graphics and Visualization (APGV 2008)*, p. 188, Los Angeles, CA, (August, 2008).

[41] Cairco, L., Babu, S., Ulinski, A., Zambaka, C. and Hodges, L. F. (2007). “Shakespearean Karaoke”, in the *Proceedings of ACM Symposium on Virtual Reality Software and Technology*, p. 239 – 240, Newport Beach, CA, Nov 5-7, 2007, (November, 2007).

[42] Daugherty, B., Babu, S., Cutler, B., and Hodges, L. F. (2007). “Officer Garcia: A Virtual Human for Mediating Eyewitness Identification”, in the *Proceedings of ACM Symposium on Virtual Reality Software and Technology*, p. 117 – 120, Newport Beach, CA, Nov 5-7, 2007, (November, 2007).

[43] Whitney, S.L., Sparto, P.J., Babu, S.V., Hodges, L.F., and Furman, J.M., Redfern, M.S. (2007) “Perceived Anxiety and Simulator Sickness in a Virtual Grocery Store in Persons with and without Vestibular Dysfunction” in *International Conference on CyberTherapy 2007*, Washington, DC, (March, 2007).

[44] Babu, S., Suma, E., Barnes, T., and Hodges, L.F. (2007). “Can Immersive Virtual Humans teach Social Conversational Protocols?” in *Proceedings of the IEEE International Conference on Virtual Reality 2007*, Charlotte, NC, (March, 2007).

[45] Suma, E., Babu, S., and Hodges, L. F. (2007). “Comparison of Travel Technique in a Complex, Multi-Level 3D Environment”, to appear in *IEEE International Symposium on 3D User Interfaces 2007*, Charlotte, N.C. Acceptance rate: 22% RECEIVED BEST PAPER AWARD, (March, 2007).

[46] Babu, S., Schmutz, S., Barnes, T., and Hodges, L.F. (2006). “What would you like to talk about?” An evaluation of social conversations with a virtual receptionist. Lecture Notes in Computer Science: Intelligent Virtual Agents (Springer Berlin/Heidelberg, ISBN 0302-9743) Vol. 4133/2006), pp. 169-180. Also published in the *Proceedings of the 6th International Conference on Intelligent Virtual Agents* (Los Angeles, U.S.A, August 2006, J. Gratch et al.(Eds.) Springer-Verlag). Acceptance rate: 28%, (August, 2006).

[47] Babu, S., Schmutz, S., Inugala, R., Rao, S., Barnes, T., Hodges, L.F. (2005). Marve: a prototype virtual human interface framework for studying human-virtual human interaction. in Springer Lecture Notes on Artificial Intelligence LNAI, (T. Panayiotopoulos et al.(Eds.) Springer-Verlag). Also published in the Proceedings of the *5th International Working Conference on Intelligent Virtual Agents* (Kos, Greece, September 2005, T. Panayiotopoulos et al.(Eds.) Springer-Verlag), p.120-133. Acceptance rate: 32%, (August, 2005).

[48] Dong, H.J. Chang, S.L., Gye, B.J., Song, C.G., Babu, S., and Hodges. L.F. (2005). Differentiation on information gathering ability in real and virtual world. *13th Pacific Conference on Computer Graphics and Applications* (Pacific Graphics 2005, Macao, China), p.157 – 159, (February, 2005).

[49] Whitney, S.L., Sparto, P.J., Hodges, L.F., Babu, S.V., Furman, J.M., and Redfern, M.S. (2005). Responses to a virtual reality grocery store in persons with and without vestibular dysfunction. *The Fourth International Workshop on Virtual Rehabilitation* (IWVR 2005, Sept. 19-21, Catalina Island, CA), (April, 2005).

[50] Babu, S., Zambaka, C., Jackson, J., Chung, T., Lok, B., Shin, M.C., and Hodges, L.F. (2005). "Virtual Human Physiotherapist Framework for Personalized Training and Rehabilitation," as short paper in *Proceedings of the International Conference on Graphics Interface 2005*, Victoria, British Columbia, Canada, May 9 - 11, 2005, (May, 2005).

[51] Zambaka, C., Lok, B., Babu, S., Xiao, D., Ulinski, A, and Hodges L.F. (2004). "Effects of Travel Technique on Cognition in Virtual Environments," in *Proceedings of IEEE Virtual Reality 2004*, Chicago, IL, p. 149-156, 286. Acceptance rate: 20.3%, (March, 2004).

[52] Babu, S., Liao, P.-C., Shin, M.C., and Tsap, L.V. (2004). "Towards Recovery of 3D Chromosome Structure," in *IEEE Workshop on Articulated and Nonrigid Motion* (held in conjunction with *IEEE CVPR 2004*), Washington, D.C., June 2004. Acceptance rate: 27%, (June, 2004).

Other Scholarly Publications (abstracts, video presentation, invited reviews, discussions)

[53] Babu, S., Schmutz, S., Barnes, T., Hodges, L.F. (2006). "What would you like to talk about? An Evaluation of Social Conversation with a Virtual Receptionist." *Intelligent Virtual Agents 2006 Video Proceedings*, (August, 2006).

- [54] Babu, S., Liao, P.-C., Shin, M. C., and Tsap, L.V. (2005). "Recovery and Visualization of 3D Chromosome Structure," Poster at *The 2005 AppliedVis Conference*, Asheville, N.C., (April, 2005).
- [55] Babu, S., Schmugge, S., Rao, S., Barnes, T., Hodges, L.F. (2005). "Marve: Messaging and Recognition Virtual Entity." *Intelligent Virtual Agents 2005 Video Proceedings*, (August, 2005)
- [56] Zambaka, C., Lok, B., Babu, S., Xiao, D., Ulinski, A., Hodges, L.F. (2004). "Effects of travel technique on cognition in virtual environments." *IEEE Virtual Reality 2004 Video Proceedings*, (July, 2004).

PRESENTATIONS

"Research on Visual Attention to Wayfinding Aids in Immersive Virtual Environments." *Distinguished Speaker, National Tsing-Hua University*, Hsinchu, Taiwan, January 2014.

"Investigating Applied Perception and Virtual Human Behavior Modeling in Interactive Virtual Environments." *Institute of Creative Technologies Seminar, University of Southern California*, June, 2013.
Link to Online Video: <http://www.youtube.com/watch?v=7W5fihFj26E>

"Investigating Applied Perception and Virtual Human Behavior Modeling in Interactive Virtual Environments." *Distinguished Visitor Seminar, National Tsing-Hua University*, Hsinchu, Taiwan, January, 2013.

"Research in Applied Perception and Virtual Humans in Immersive Virtual Environments." *Distinguished Lecture Series, Indian Institute of Technology*, Madras, India, August, 2012.

"Investigating Applied Perception and Peer Influence in Immersive Virtual Environments." *Computer Science Colloquia, University of Iowa*, Oct, 2009.

"Investigating Applied Perception and Peer Influence in Immersive Virtual Environments." *Graduate Seminar, University of North Carolina at Charlotte*, Jan, 2009.

"Investigating Applied Perception and Peer Influence in Immersive Virtual Environments." *Graduate Seminar, Clemson University*, Oct, 2008.

“Research in Social Conversation and Peer Influence in Human-Virtual Human Interaction.” *Teaching Game Design Conference, Dakota State University, South Dakota, Oct, 2008.*

"Research directions in Travel Techniques, Display Modalities, and Interactive Virtual Humans in Immersive Virtual Environments." *Center for Computer Aided Design (CCAD), University of Iowa, Jan, 2008.*

"Inter-Personal Social Conversation in Multi-modal Human-Virtual Human Interaction", *Institute of Creative Technologies (ICT), University of Southern California, June, 2007.*

"Inter-Personal Social Conversation in Multi-modal Human-Virtual Human Interaction", *Department of Computer Science, University of Iowa, April, 2007.*

"Inter-Personal Social Conversation in Multi-modal Human-Virtual Human Interaction", *Department of Computer Science, Rochester Institute of Technology, April, 2007.*

"Virtual Human Interface Framework (VHIF) for studying Human-Virtual Human Interaction", *Graduate Seminar, University of North Carolina at Charlotte, April, 2005.*

"Marve: Messaging and Recognition Virtual Entity", *Center for Human Computer Interaction and 3D Interaction Group, Virginia Tech, October, 2004.*

HONORS AND AWARDS

Best Paper Award: IEEE International Conference on Healthcare Informatics 2013

NVIDIA Professorship, March 2010

Best Paper Award: IEEE Symposium on 3D User Interfaces 2007

Member, Phi Beta Delta Honor Society for International Scholars 2005

Member, Golden Key National Honor Society 2005

Student Member, College of Information Technology, University of North Carolina at Charlotte, Graduate Committee 2005

SPONSORED RESEARCH (TOTAL AWARDS: \$1,600,120)

“Virtual Environment Interactions: Exploring Grounded Embodied Pedagogy in Support of Computational Thinking,” National Science Foundation, Co-Principal Investigator, \$579,673 (2013 – 2016).

“Nursing Surveillance Training using Interactive Virtual Simulation,” Medline Industries, Co-Principle Investigator, Total \$99,981, (08/13 – 07/14).

“Accessible Support Services and Instruction for Sustainable Transition to Work (ASSIST),” US Department of Labor, Co-Principle Investigator, Total \$878,467, (01/11 – 09/14).

“Improving Patient Safety with Interactive Virtual Environment Simulation for Direct Care Nurses,” St. Francis Foundation, Co-Principle Investigator, Total \$41,999, (05/11 – 05/12).

OTHER SPONSORED ACTIVITY (TOTAL AWARDS: \$63,000)

“A Virtual Experimenter as Means to Overcome Biases in Psychosomatic Research Methodology”, Transformative Initiative for Generating Extramural Research (TIGER), Clemson University, Principle Investigator, Total \$20,000, (08/14 – 06/14).

“Enhancing Depth Estimation in Virtual Reality via Visuo-Motor Calibration”, University Research Grant Committee, Clemson University, Principle Investigator, Total \$10,000, (08/13 – 09/14).

“Instrumentation of Large Screen Stereoscopic Display for Perceptual Affordance Investigation”, NVIDIA Faculty Award, Principle Investigator, Total \$3,000, (01/10 – 05/10).

“Using Virtual Peers to Investigate Social Influences in Children’s Bicycling,” Internal Funding Initiative, Social Sciences Funding Program – University of Iowa, Principle Investigator, Total \$30,000, (05/09 – 05/10).

GRADUATE STUDENT ADVISING

Masters Graduates

Yangxiang Wu, (MS Computer Science), “Effects of Virtual Human Animation on Emotion Contagion in Simulated Interpersonal Experiences,” 05/14, (Advisor).

Manan Gupta, (MS Computer Science) “Data Driven Approach to Multi-Agent Low Level Behavior Generation in Medical Simulations,” 05/2012, (Advisor).

Philip Napieralski, (MS Computer Science) “Effects of Immersion on Spatial Updating in Virtual Panoramas,” 05/2012, (Advisor).

Current Graduate Advising

Jeffrey Bertrand (PhD), “Bimanual Interaction Paradigm for Engagement and Complex Fine Motor Skills Learning in Interactive Simulations,” 05/16, (Advisor).

Elham Ebrahimi (PhD), “Visuo-Motor Calibration to Enhance Depth Perception in Immersive Virtual Reality,” 05/17, (Advisor)

Dhaval Parmar (PhD), “Simulation Based Education of Computational Thinking via Interactive Virtual Humans,” 05/18, (Advisor).

David Brickler (PhD), “Effects of Visual, Proprioceptive, and Kinesthetic Feedback in Psychomotor Skills Education in Immersive Virtual Environments,” 05/18, (Advisor).

Nathan Newsome (PhD), “A Virtual Experimenter for Standardization of Interaction in Psychosomatic Research,” 05/19, (Advisor).

Ayush Bhargava (PhD), “Effects of Visual Artifacts due to Network Congestion on User Experience in Distributed Virtual Worlds,” 05/19, (Advisor).

Robert Congdon (PhD), “Effects of Travel and Display Metaphor in Visual Search Tasks in Immersive Virtual Environments,” 05/19, (Advisor).

Xianshan Qu (PhD), Thesis topic to be determined, 05/19, (Advisor).

Himanshu Chaturvedi (MS/PhD), “Effects of Stylized versus Realistic Rendering of Virtual Humans on Emotion Generation in Simulated Interpersonal Experiences,” 05/15, (Advisor).

Current Graduate Committees

Lauren Cairco Dukes (PhD), Expected: 05/15

Jerome McClendon (PhD), Expected: 12/14

Toni Pence (PhD), Expected: 05/15

Past Graduate Committees

Kennis Gosha (PhD), “The Application of Relational Agents for Mentoring African-American STEM Doctoral Students”, 05/13, (Committee Member)

TEACHING

Courses Taught (Beginning Fall 1990)

CPSC 1214, Introduction to Programming in C++, F06, S07, University of North Carolina at Charlotte, Department of Computer Science.

CS:22:14, Introduction to Virtual Environments and Embodied Conversational Agents, S08, S09, University of Iowa, Department of Computer Science.

CPSC 411/611, Virtual Reality Systems, F10, F11, F12, F14, Clemson University, School of Computing.

CPSC 414/614, Introduction to Human Computer Interaction, S11, S12, S13, Su14, Clemson University, School of Computing.

HCC 881, Fundamentals of Measurements and Evaluation of HCC Systems, S13, Clemson University, School of Computing.

DPA 4000/6000, Technical Fundamentals I, F13, Clemson University, School of Computing

DPA 4010/6010, Technical Foundations II, S14, Clemson University, School of Computing

CPSC 1020, Introduction to Programming II, S14, Clemson University, School of Computing

New Course Development

HCC 881, Fundamentals of Measurements and Evaluation of HCC Systems, Clemson University, School of Computing.

UNIVERSITY AND PUBLIC SERVICE

Committees

Division: Member, PhD Student Portfolio Review Committee (2011-Present).

School: Chair, External and Foreign Programs Committee, (2011-2012).

Member, Graduate Student Recruiting Committee, (2011-Present).

Member, Sabbatical Review Committee, (2014-Present)

Member, SoC Space Committee, (2014-Present).

Member, SoC External Relations Committee, (2014-Present).

MISCELLANEOUS

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Sept 26th, 2014.