

Andrew Raij, PhD

Visiting Research Associate Professor • Institute for Simulation and Training • University of Central Florida
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Research Interests

Human-computer interaction with emphasis on creating and studying new systems, user interfaces and experiences for **training, health, and wellbeing**. Technical areas include: **augmented, mixed and virtual reality; virtual humans and avatars; mobile and ubiquitous computing; data visualization.**

Education

- Doctor of Philosophy in Computer Engineering* 2004 – 2009
University of Florida, Gainesville, FL
Dissertation: “Using Immersion and Information Visualization to Analyze Human-Virtual Human Interactions”
Advisor: Benjamin Lok
Honors: University of Florida Alumni Graduate Fellow, Delta Epsilon Iota
- Master of Science in Computer Science* 2001 – 2003
University of North Carolina at Chapel Hill, Chapel Hill, NC
Advisors: Henry Fuchs, Marc Pollefeys, Herman Towles
- Bachelor of Science in Computer Science, Minor in English* 1997-2001
Northwestern University, Evanston, IL
Advisors: Benjamin Watson, Ian Horswill
Honors: Alpha Lambda Delta, National Society of Collegiate Scholars
- High School* 1993-1997
Ransom Everglades School, Miami, FL
Graduated Cum Laude

Employment History

- University of Central Florida, Institute for Simulation and Training, Orlando, FL*
Visiting Research Associate Professor 3/2015 - Present
- University of South Florida, Tampa, FL*
Courtesy Assistant Professor, Electrical Engineering 3/2015 – Present
Courtesy Assistant Professor, Computer Science and Engineering 2/2012 – Present
Assistant Professor, Electrical Engineering 12/2010 – 03/2015
- University of Memphis, Memphis, TN* 7/2009 – 12/2010
Post Doctoral Fellow, Wireless Sensors and Mobile Ad Hoc Networks Lab
Supervisor: Dr. Santosh Kumar

University of Central Florida, Orlando, FL 3/2009 – 6/2009
Simulation Research Manager, College of Medicine
Supervisor: Laura Cuty-Ruiz

University of Florida, Gainesville, FL
Post Doctoral Associate, Virtual Experiences Research Group 1/2009 – 6/2009
Research Assistant, Virtual Experiences Research Group 8/2008 – 12/2008
Alumni Fellow, Virtual Experiences Research Group 8/2004 – 7/2008
Supervisor: Benjamin Lok

University of North Carolina at Chapel Hill, Chapel Hill, NC 8/2001 – 5/2004
Research Assistant, Office of the Future Research Group,
Supervisors: Henry Fuchs, Marc Pollefeys, Herman Towles

Northwestern University, Evanston, IL
Research Assistant 06/2001 – 8/2001
Supervisor: Benjamin Watson

IBM, Printing Systems Division, Boulder, CO 06/2000 – 8/2000
Software Development Intern

Publications / Presentations

Research Impact Metrics (Google Scholar, August 2016)
h-index: 17, Citations: 1259
<https://scholar.google.com/citations?user=r4jOJSoAAAAJ>

Refereed Journal Articles

R. Schubert, G. Welch, S. Daher, A. Raij, “The HuSIS: A Dedicated Space for Studying Human Interactions,” To appear in *IEEE Computer Graphics and Applications - Special Issue on CG for Defense Applications*. *ISI Impact Factor: 1.203*

L.G. Jaimes, M. Llofriu, A. Raij. “PREVENTER, a Selection Mechanism for Just-in-Time Preventive interventions,” *IEEE Transactions on Affective Computing*. *ISI Impact Factor: 2.675*

L. G. Jaimes, I. J. Vergara-Laurens, A. Raij. “A Survey of Incentive Techniques for Mobile Crowd Sensing,” *IEEE Internet of Things Journal*, Vol. 2, Issue 5, pp. 370-380, March 2015.

A. Deladisma, K. Johnsen, A. Raij, B. Rossen, A. Kotranza, M. Kalapurakal, S. Szlam, J. Bittner, D. Swinson, B. Lok, D. S. Lind. "Medical Student Satisfaction using a Virtual Patient System to Learn History-Taking and Communication Skills." *Studies in Health Technology and Informatics*, Vol. 132, pp. 101-5, January 2008.

A. Raij, K. Johnsen, R. Dickerson, B. Lok, M. Cohen, M. Duerson, R. Pauley, A. Stevens, P. Wagner, D.S. Lind. "Comparing Interpersonal Interactions with a Virtual Human to those with a Real Human." *IEEE Transactions on Visualization and Computer Graphics*, Vol. 13, No. 3, pp. 443-457, May 2007. <<FEATURED ARTICLE>>, ISI Impact Factor: 2.445

A. Deladisma, M. Cohen, A. Stevens, P. Wagner, B. Lok, T. Bernard, C. Oxendine, L. Schumacher, K. Johnsen, R. Dickerson, A. Raij, R. Wells, M. Duerson, J. G. Harper, D. S. Lind. "Do Medical Students Respond Empathetically to a Virtual Patient?" *The American Journal of Surgery*, Vol. 193, No. 6, pp. 756-760, June 2007. ISI Impact Factor: 2.605

B. Lok, R. Ferdig, A. Raij, K. Johnsen, R. Dickerson, J. Coutts, A. Stevens, D. S. Lind. "Applying Virtual Reality in Medical Communication Education: Current Findings and Potential Teaching and Learning Benefits of Immersive Virtual Patients." *Virtual Reality*, Vol. 10, No. 3, pp. 185-195, November 2006. ISI Impact Factor: 0.667

A. Stevens, J. Hernandez, K. Johnsen, R. Dickerson, A. Raij, J. Jackson, M. Shin, J. Cendan, M. Duerson, B. Lok, D. S. Lind. "The Use of Virtual Patients to Teach Medical Students History Taking and Communication Skills." *American Journal of Surgery*, Vol. 191, No. 6, pp. 806-11, June 2006. ISI Impact Factor: 2.605

K. Johnsen, R. Dickerson, A. Raij, B. Lok, J. Jackson, M. Shin, J. Hernandez, A. Stevens, D. S. Lind. "Evolving an Immersive Medical Communication Skills Trainer." *Presence: Teleoperators and Virtual Environments*, Vol. 15, No. 1, pp. 33-46, February 2006. ISI Impact Factor: 0.750

R. Dickerson, K. Johnsen, A. Raij, B. Lok, T. Bernard, A. Stevens, D. S. Lind. "Virtual Patients: Assessment of Synthesized Versus Recorded Speech." *Studies in Health Technology and Informatics*, 119: 114-9, January 2006.

Refereed Conference Articles

E. Bozgeyikli, A. Raij, S. Katkooori, R. Dubey, "Locomotion in Virtual Reality for Individuals with Autism Spectrum Disorder," To appear in *Proc. of The ACM SIGCHI Annual Symposium on Spatial User Interaction 2016*, Tokyo, Japan, October 16, 2016 (acceptance rate: 17%).

E. Bozgeyikli, A. Raij, S. Katkooi, R. Dubey, "Point and Teleport Locomotion Technique for Virtual Reality," To appear in *Proc. of The ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY)*, Austin, TX, USA, October 16, 2016 (acceptance rate: 29%).

L. Bozgeyikli, A. Raij, S. Katkooi, R. Alqasemi, "Effects of Environmental Clutter and Motion on User Performance in Virtual Reality Games," to appear in Proc. of Fictional Game Elements Workshop at *The ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY)*, Austin, TX, USA, October 16, 2016.

T. Murray, E. Hekler, D. Spruijt-Metz, D. E. Rivera, A. Raij. "Lessons Learned in Development of a Behavior Modeling Tool for Health Intervention Design: BehaviorSim," in *Proc. of the 7th International Conference on Applied Human Factors and Ergonomics (AHFE 2016)*, Orlando, FL, USA, July 2016.

E. Bozgeyikli, L. Bozgeyikli, A. Raij, S. Katkooi, R. Alqasemi, and R. Dubey. "Virtual Reality Interaction Techniques for Individuals with Autism Spectrum Disorder: Design Considerations and Preliminary Results." In *Proc. of International Conference on Human-Computer Interaction (HCI 2016)*, Toronto, Canada, July 2016.

T. Murray, E. Hekler, D. Spruijt-Metz, D. E. Rivera, A. Raij. "Formalization of Computational Human Behavior Models for Contextual Persuasive Technology," in *Proc. of the 11th International Conference on Persuasive Technologies (PERSUASIVE 2016)*, Salzburg, Austria, April 2016.

M. Lee, K. Kim, S. Daher, A. Raij, R. Schubert, J. Bailenson, G. Welch, "The Wobbly Table: Increased Social Presence via Subtle Incidental Movement of a Real-Virtual Table," in *Proc. of IEEE Virtual Reality 2016*, Greenville, SC, USA, March 2016 (acceptance rate: 26%).

L. Bozgeyikli, E. Bozgeyikli, A. Raij, R. Alqasemi, S. Katkooi, R. Dubey. "Vocational Training with Immersive Virtual Reality for Individuals with Autism: Towards Better Design Practices," in *Proc. of the 2nd Workshop on Everyday Virtual Reality (WeVR)* at IEEE Virtual Reality 2016, Greenville, South Carolina, USA, March 2016.

M. Sharmin, A. Raij, D. Epstein, I. Nahum-Shani, J. G. Beck, S. Vhaduri, K. Preston, S. Kusmar. "Visualization of Time-Series Sensor Data to Inform the Design of Just-in-Time Adaptive Stress Interventions," in *Proc. of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, Osaka, Japan, September 2015 (acceptance rate: 25%).

- L. Bozgeyikli, E. Bozgeyikli, M. Clevenger, A. Raij, R. Alqasemi, S. Sundarrao, R. Dubey. "VR4VR: Vocational Rehabilitation of Individuals with Disabilities in Immersive Virtual Reality Environments." in *Proc. of the 8th ACM International Conference on Pervasive Technologies Related to Assistive Environments (PETRA '15)*, Corfu, Greece, July 2015.
- L. G. Jaimes, M. Llofriú, A. Raij, "CALMA, an Algorithm Framework for Mobile Just in Time Interventions, in *Proc. of IEEE SoutheastCon 2015*, Fort Lauderdale, FL, March 2015.
- L. G. Jaimes, A. Chakeri, J. Lopez, A. Raij, "A Cooperative Incentive Mechanism for Recurrent Crowd Sensing," in *Proc. of IEEE SoutheastCon 2015*, Fort Lauderdale, FL, March 2015.
- L. G. Jaimes, J. Calderon, J. Lopez, A. Raij, "Trends in Mobile Cyber-Physical Systems for Health Just-in-Time Interventions," in *Proc. of IEEE SoutheastCon 2015*, Fort Lauderdale, FL, March 2015.
- L. Jaimes, I. Vergara-Laurens, A. Raij, "A Crowd Sensing Incentive Algorithm for Data Collection for Consecutive Time Slot Problems," in *Proc. of IEEE LATINCOM 2014*, Cartagena de Indias, Colombia, November 2014.
- L. Bozgeyikli, E. Bozgeyikli, A. Raij, "Keep Brushing! Developing Healthy Oral Hygiene Habits in Young Children with an Interactive Toothbrush," in *Proc. of EURASIA GRAPHICS 2014*, Ankara, Turkey, October 2014.
- Md. M. Rahman, R. Bari, A. A. Ali, M. Sharmin, A. Raij, K. Hovsepian, S. M. Hossain, E. Ertin, A. Kennedy, D. H. Epstein, K. L. Preston, M. Jobes, J. G. Beck, S. Kedia, K. D. Ward, M. al'Absi, S. Kumar, "Are We There Yet? Feasibility of Continuous Stress Assessment via Wireless Physiological Sensors," in *Proc. of The 5th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB)*, Newport Beach, CA, September, 2014 (acceptance rate: ~25%).
- L. Jaimes, M. Llofriú, A. Raij, "A Stress-Free Life: Just-in-Time Interventions for Stress via Real-Time Forecasting and Intervention Adaptation," in *Proc. of 9th International Conference on Body Area Networks*, London, Great Britain, September 2014 (acceptance rate: 19%).
- L. Jaimes and A. Raij, "Forecasting Biorhythms for Preventative Stress Interventions," in *Proc. of Workshop on Biological Rhythms and Technology at ACM SIGCHI Conference on Human Factors in Computing Systems 2014*, Toronto, ON, CA, April 2014.

L. Bozgeyikli, E. Bozgeyikli, M. Clevenger, S. Gong, A. Raij, R. Alqasemi, S. Sundarrao, and R. Dubey, "VR4VR: Towards Vocational Rehabilitation of Individuals with Disabilities in Immersive Virtual Reality Environments," *In Proc. of Workshop on Virtual and Augmented Assistive Technologies (VAAT) at IEEE Virtual Reality 2014*, Minneapolis, MN, April 2014.

S. Syed, S. Nukala, J. L. Marcano, W. Bedwell, L. Haubner, A. Raij, "Sensing and Visualization Tools for Objective Assessment and Debriefing of High Risk Neonatal Resuscitation Training Scenarios," in *Proc. of Medicine Meets Virtual Reality 21*, Manhattan Beach, CA, February 2014.

T. Murray, D. Hardy, D. Spruijt-Metz, E. Hekler, A. Raij, "Avatar Interfaces for Biobehavioral Feedback", in *Proc. of Human-Computer Interaction (HCI) International 2013, Designing Experiences for Facilitating Positive Behavior Change Parallel Session*, Las Vegas, NV, July 2013.

L. Jaimes, T. Murray, A. Raij, "Increasing Trust in Personal Informatics Tools," in *Proc. of HCI International, Designing Experiences for Facilitating Positive Behavior Change Parallel Session*, Las Vegas, NV, July 2013.

A. Basu, C. Saupe, E. Refour, A. Raij, K. Johnsen, "Immersive 3DUI on One Dollar a Day," in *Proc. of the IEEE Symposium on 3D User Interfaces*, Orange County, CA, March 2012.
Acceptance Rate: 31%

A. Basu, A. Raij, K. Johnsen, "Ubiquitous Collaborative Activity Virtual Environments," in *Proc. of ACM Conference on Computer Supported Cooperative Work*, Seattle, WA, February 2012.
Acceptance Rate: 39.5%

E. Ertin, N. Stohs, S. Kumar, A. Raij, M. al'Absi, T.Kwon, S. Mitra, Siddharth Shah, and J. W. Jeong, "AutoSense: Unobtrusively Wearable Sensor Suite for Inferencing of Onset, Causality, and Consequences of Stress in the Field," in *Proc. of the 9th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, Seattle, WA, November 2011. (Acceptance Rate: 19.5%)

M. Musthag, A. Raij, D. Ganesan, S. Kumar and S. Shiffman, "Exploring Micro-Incentive Strategies for Participant Compensation in High Burden Studies," in *Proc. of the 13th ACM Conference on Ubiquitous Computing (UbiComp)*, Beijing, China. September 2011. (Acceptance Rate: 16.6%)

A. Raij, A. Ghosh, S. Kumar, M. Srivastava. "Privacy Risks Emerging from the Adoption of Innocuous Wearable Sensors in the Mobile Environment." In *Proc. of the ACM SIGCHI Conference on Human Factors in Computing Systems*, Vancouver, CA, May 2011. Acceptance Rate: 26%

K. Plarre, A. Raij, S. M. Hossain, A. A. Ali, M. Nakajima, M. al'Absi, E. Ertin, T. Kamarck, S. Kumar, M. Scott, D. Siewiorek, A. Smailagic, L. Wittmers. "Continuous Inference of Psychological Stress from Sensory Measurements Collected in the Natural Environment." In *Proc. of the ACM/IEEE International Conference on Information Processing in Sensor Networks - IP Track*, Chicago, IL, April 2011. Acceptance Rate: 21%

A. Raij, A. Kotranza, D. S. Lind, B. Lok. "Virtual Experiences for Social Perspective-Taking." In *Proc. of IEEE Virtual Reality 2009*, Lafayette, Louisiana, March 2009. Acceptance Rate: 34%

A. Raij, B. Lok. "IPSViz: An After-Action Review Tool for Human-Virtual Human Experiences." In *Proc. of IEEE Virtual Reality 2008*, Reno, NV, March 2008. Acceptance Rate: 26%

K. Johnsen, A. Raij, A. Stevens, D. Lind, B. Lok. "The Validity of a Virtual Human Experience for Interpersonal Skills Education." *Proc. of the SIGCHI conference on Human Factors in Computing Systems*, San Jose, CA, April 2007. Acceptance Rate: 25%

A. Raij, K. Johnsen, R. Dickerson, B. Lok, M. Cohen, A. Stevens, T. Bernard, C. Oxendine, P. Wagner, D. S. Lind. "Interpersonal Scenarios: Virtual \approx Real?" *Proc. of IEEE Virtual Reality 2006*, Alexandria, VA, March 2006. Acceptance Rate: 26%

T. Bernard, A. Stevens, P. Wagner, N. Bernard, L. Schumacher, K. Johnsen, R. Dickerson, A. Raij, B. Lok, M. Duerson, M. Cohen, D.S. Lind. "A Multi-Institutional Pilot Study to Evaluate the Use of Virtual Patients to Teach Health Professions Students History-Taking and Communication Skills." *Proc. of the Society of Medical Simulation 2006*, San Diego, CA, January 2006.

K. Johnsen, R. Dickerson, A. Raij, B. Lok, J. Jackson, M. Shin, J. Hernandez, A. Stevens, D. S. Lind. "Experiences in Using Immersive Virtual Characters to Educate Medical Communication Skills." *Proc. of IEEE Virtual Reality 2005*, Bonn, Germany, March 2005. Acceptance Rate: 26%,

R. Dickerson, K. Johnsen, A. Raij, B. Lok, J. Hernandez, A. Stevens, D. S. Lind. "Evaluating a Script-Based Approach to Simulating Patient-Doctor Interaction." *Proc. of SCS 2005 International Conference on Human-Computer Interface Advances for Modeling and Simulating (SIMCHI '05)*, New Orleans, LA, January 2005.

A. Raij, M. Pollefeys. "Auto-Calibration of Multi-Projector Display Walls." *Proc. of the 17th International Conference on Pattern Recognition (ICPR 2004)*, Cambridge, UK, September 2004. Acceptance Rate: 18%,

Refereed Abstracts, Demonstrations, Posters, and Presentations

L. Baum, T. Schneider, A. Alman, M. Colouris, J. Lindenberger, A. Raij, I. Vasquez, M. Warner, "Application of adolescents' recommendations in the development of consumer oriented asthma self management mobile app," to appear in *Proc. of American Public Health Association Annual Meeting & Expo*, Denver, CO, USA, Nov. 2016.

S. Daher, K. Kim, M. Lee, A. Raij, R. Schubert, J. Bailenson, and G. Welch, "Exploring Social Presence Transfer in Real-Virtual Human Interaction," in *Proc. of IEEE Virtual Reality*, Greenville, SC, USA, March 2016.

D. Spruijt-Metz, T. Murray, A. Raij, D. Rivera, E. Hekler, "Building new Computational Models of Momentary Health-Related Behavior," in *Proc. of Health 2.0 2014 Fall Conference*, Santa Clara, CA, September, 2014.

E. Bozgeyikli, L. Bozgeyikli, M. Clevenger, A. Raij, R. Alqasemi, S. Sundarrao, and R. Dubey, "Poster: Design and Development of a Virtual Reality System for Vocational Rehabilitation of Individuals with Disabilities," in *Proc. of IEEE Symposium on 3D User Interfaces 2014*, Minneapolis, MN, April 2014.

T. Murray, L. Jaimes, E. Hekler, D. Spruijt-Metz, A. Raij, "Demonstration Paper: A Glimpseable Mobile Avatar for Behavior Change," in *Proc. of ACM Wireless Health 2013*, Baltimore, MD, November 2013.

E. H. Lazzara, S. J. Weaver, A. Raij, D. Metcalf, F. Drews, M. Dierks, "Mobile Technology The Wave of the Future to Improve Healthcare?" in *Proc. of the Human Factors and Ergonomics Society Annual Meeting*, Las Vegas, NV, September, 2011.

M. M. Rahman, A. A. Ali, A. Raij, E. Ertin, M. al'Absi, S. Kumar. "Online Detection of Speaking from Respiratory Measurement Collected in the Natural Environment." in *Proc. of the ACM/IEEE International Conference on Information Processing in Sensor Networks*. Chicago, IL, April 2011.

K. Plarre, A. Raij, S. Guha, M. al'Absi, E. Ertin, and Santosh Kumar. "Automated Detection of Sensor Detachments for Physiological Sensing in the Wild." *ACM Wireless Health*, San Diego, CA, October 2010.

A. Gucwa, A. Kotranza, A. Raij, B. Rosson, J. Beatty, C. Laserna, M. A. Park, C. Pugh, K. Johnsen, B. Lok, D. S. 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*, Salt Lake City, UT, April 2009.

A. Gucwa, J. Beatty, A. Deladisma, A. Kotranza, A. Raij, H. Shah, P. Fox, A. Gehlot, E. Kruse J. McLoughlin, B. Lok, C. Pugh, D.S. 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*, Lake Buena Vista, FL, January 2009.

A. Deladisma, T. Imam, A. Kotranza, A. Raij, J. Bittner, B. Lok, C. Pugh, D. S. Lind. "The Use of Mixed Reality Humans to Teach Clinical Skills." *47th Annual Conference on Research in Medical Education (RIME)*, San Antonio, TX, October 2008.

A. Deladisma, M. Cohen, A. Stevens, P. Wagner, B. Lok, T. Bernard, C. Oxendine, L. Schumacher, K. Johnsen, R. Dickerson, A. Raij, R. Wells, M. Duerson, J. G. Harper, D. S. Lind. "Do Health Professions Students Respond Empathetically to a Virtual Patient?" *Georgia Chapter of the American College of Surgeons*, Atlanta, GA, October 2006

M. Cohen, A. Stevens., P. Wagner, B. Lok, T. Bernard, C. Oxendine, L. Schumacher, K. Johnsen, R. Dickerson, A. Raij, R. Ross. M. Duerson, J. Parimala, D.S. Lind. "How Comparable are Medical Student Empathetic Interactions in a Similar Virtual Patient/Standardized Patient Abdominal Pain Scenario?" *Southern Group on Education Affairs 2006*, Galveston, TX, May 2006.

M. Cohen, A. Stevens, P. Wagner, B. Lok, T. Bernard, C. Oxendine, L. Schumacher, K. Johnsen, R. Dickerson, A. Raij, R. Ross, M. Duerson, J. Parimala, D.S. Lind. "Do Health Professions Students Respond Empathetically to a Virtual Patient?" *Southern Group on Education Affairs 2006*, Galveston, TX, May 2006.

A. Stevens, M. Cohen, K. Johnsen, R. Dickerson, A. Raij, R. Wells, C. Oxendine, P. Wagner, T. Bernard, J. C. Cendan, M. Duerson, R. Pauly, B. Lok, D. S. Lind. "Implementing a Virtual Patient (VP) into the Medical School Curriculum at the University of Florida (UF)," *Southern Group on Education Affairs 2006*, Galveston, TX, May 2006.

A. Stevens, J. Hernandez, K. Johnsen, R. Dickerson, A. Raij, J. Jackson, M. Shin, J. Cendan, M. Duerson, B. Lok, D. S. Lind. "The Use of Virtual Patients to Teach Medical Students Communication Skills." *Southern Group on Education Affairs*, Winston-Salem, NC, April 2005.

A. Stevens, J. Hernandez, K. Johnsen, R. Dickerson, A. Raij, J. Jackson, M. Shin, J. Cendan, M. Duerson, B. Lok, D. S. Lind. "The Use of Virtual Patients to Teach Medical Students Communication Skills." *Proc. of the Association of Surgical Education Meeting 2005*, New York, NY, April 2005.

A. Raij, G. Gill, A. Majumder, H. Towles, H. Fuchs. "PixelFlex2: A Comprehensive, Automatic, Casually-Aligned Multi-Projector Display." *Proc. of IEEE International Workshop on Projector-Camera Systems (PROCAMS), held in conjunction with the 9th IEEE International Conference on Computer Vision (ICCV)*, Nice, France, October 2003.

Patents

B. C. Lok, D. S. Lind, J. C. Cendan, A. B. Raij, B. H. Rossen, A. A. Kotranza, and K. J. Johnsen. "Communication Skills Training Using Interactive Virtual Humans," patent pending.

Invited Panels

Social Marketing Conference 2012: "New Technologies for Improving Personal Health"

Human Factors & Ergonomics Society 2011: "Healthcare Applications of Mobile Devices"

IEEE Virtual Reality 2008: "Building the Future Of – and a Career in – VR" (NSF sponsored)

Invited Talks

"Virtual People / Virtual Behavior," StudioX Global Learning Forum, Air University, United States Air Force, June 2016. Delivered in Second Life environment. Watch on YouTube:

<http://bit.ly/RaijGLX>

"Pervasive Health Technology and the Quantified Self: Better Living through Personal Data," Healthcare Simulation Speaker Series, College of Nursing, University of Central Florida, November 2015.

"Interactive Systems for Training Medical Professionals and Self-Managing Health," IEEE Florida West Coast Chapter Engineering in Medicine and Biology Society, March 2012.

"Personal Health Systems: New Technologies for Improving Personal Health," Meeting of the Minds, James A. Haley Veterans Administration, July 2012.

"Enabling Reflection on Interpersonal Skills using Visualization and Immersive Virtual Reality," Department of Electrical Engineering, University of South Florida, March 2010.

"Reflecting on Real-World Interpersonal Skills through Virtual Human Experiences," Department of Computer Science Colloquium Series, University of Memphis, September 2009.

"Immersive Virtual Patients for Medical Interview Training," Miller School of Medicine, University of Miami, March 2009.

"Virtual Humans, Immersion, and Visualization for Medical Interview Skills Feedback," Medical College of Georgia, March 2009.

"IPSViz: After-Action Review for Virtual Human Experiences," Department of Computer Science and Engineering, Michigan State University, April 2008.

"IPSViz: After-Action Review for Virtual Human Experiences," School of Computer Science, Telecommunications, and Information Systems, DePaul University, April 2008.

"Playing Doctor: A Game Design Study," Guest Lecture, GAM 224 Introduction to Game Design, School of Computer Science, Telecommunications, and Information Systems, DePaul University, April 2008.

"IPSViz: After-Action Review for Virtual Human Experiences," Department of Computer Science, North Carolina State University, March 2008.

"Virtual Humans for Interpersonal Skills Education," Electronic Visualization Lab, University of Illinois Chicago, October 2007.

"Interpersonal Scenarios: Virtual≈Real?," Graduate Student Seminar, School of Electrical Engineering and Computer Science, University of Central Florida, March 2006.

“Interpersonal Scenarios: Virtual≈Real?” G2V2: Geometry, Graphics, Vision, and Visualization Seminar, Department of Computer and Information Science and Engineering, University of Florida, March 2006.

Other Publications (not refereed)

J. L. Marcano, S. A. Syed, S. Nukala, L. Haubner, W. Bedwell, J. Cannon-Bowers, A. Raij, “Objective Assessment and Debriefing of High-Risk Team Medical Scenarios Using Computer Vision and Pattern Recognition,” University of South Florida Undergraduate Research Colloquium, April 2013. [abstract; selected for oral presentation]

T. Murray, L. G. Jaimes, D. Hardy, D. Spruijt-Metz, E. Hekler, A. Raij, “Avatar Based Human-in-the-Loop Feedback,” University of South Florida College of Engineering Research Day, October 2012. [poster]

L. G. Jaimes, T. Murray, A. Raij, “Context-Aware Visualization of Psychosocial Stress and Stressors,” University of South Florida College of Engineering Research Day, October 2012. [poster]

S. S. Manchikanti, V. K. Bhattiprolu, S. A. Syed, L. Haubner, W. Bedwell, J. Cannon-Bowers, A. Raij, “Sensing and Visualization Tools for Objective Assessment and Debriefing of High-Risk Team Medical Scenarios,” University of South Florida College of Engineering Research Day, October 2012. [poster]

D. Hardy, A. Raij, “Materials for a Squeezable, Intelligent, Tangible Avatar for Just-in-Time Stress Health Intervention,” University of South Florida Undergraduate Research Colloquium, April 2012 [abstract; selected for oral presentation]

T. Murray, A. Raij. Using Interactive Visualizations to Improve Self-Awareness Management of Everyday Life Stress. Presented at 2011 USF College of Engineering Research Day Student Poster Competition [poster]

Funding

Transportable Human Surrogate Interaction System (THuSIS)

PI: Gregory F. Welch

Co-PIs: Charles Hughes, **Andrew Raij**

Dates: September 1, 2016 – August 31, 2017

Amount: \$148k

Agency: Office of Naval Research, Defense University Research Instrumentation Program

Summary: Develop six transportable virtual reality systems for simulating human surrogates (virtual humans) and measuring the physiological and behavioral responses of human subjects during human-surrogate interactions. Allows transportation of human-surrogate training experiences and experiments directly to human subjects (rather than requiring subjects come to the lab) and reduces barriers to collecting and analyzing real human subject behaviors in situ.

Draper Laboratory Ph.D. Student Fellowship for Tylar Murray

PIs: Andrew Raij, Tylar Murray

Dates: January 2014 - December 2016 (renewable yearly until graduation)

Amount: \$159k

Agency: Charles Stark Draper Laboratory

Summary: Support Tylar Murray, Ph.D student, in his research on avatar-based behavioral interventions; facilitate collaboration with Draper Laboratory.

MRI: Acquisition of a CAREN Virtual Reality System for Collaborative Research in Assistive and Rehabilitation Technologies

PI: Rajiv Dubey (ME)

Co-PIs: David Diamond (Psychology), Sandy Quillen (Physical Therapy), Andrew Raij, Kyle Reed (ME), Sudeep Sarkar (CSE)

Dates: September 1, 2012 - August 31, 2015

Amount: \$490k

Agency: National Science Foundation, Major Research Instrumentation Program

Summary: Acquire a CAREN (Computer Assisted Rehabilitation Environment), a turnkey customizable 3D virtual reality system. It includes a cylindrical screen projection system, 12-camera real-time motion-capture system, a six degree-of-freedom motion base and a control software suite. The system facilitates ongoing interdisciplinary and inter- and intra-institutional research to analyze human mobility and function and to improve the quality of life of individuals with disabilities and older adults.

Honors

Promoted to Association for Computing Machinery (ACM) Senior Member 5/2015

Quantified Self Public Health Symposium 2015, San Diego, CA. 4/2015

One of ~100 researchers and industry veterans selected to attend

<http://quantifiedself.com/symposium/Symposium-2014/>

Quantified Self Public Health Symposium 2014, San Diego, CA. 4/2014

One of ~100 researchers and industry veterans selected to attend

<http://quantifiedself.com/symposium/Symposium-2014/>

International Workshop on New Computationally-Enabled Theoretical Models to Support Health Behavior Change and Maintenance, Brussels, Belgium 10/2012

One of 30 investigators selected to attend; sponsored by the National Science Foundation, the National Institutes of Health, and the European Union
<http://www.behaviorchange.ca/>

Mobile Health Summer Institute, San Diego, CA 06/2011

One of 30 young investigators selected to attend; **Acceptance rate below 9%**; sponsored by the National Institutes of Health, National Science Foundation, and industry partners.

National Academies Keck Futures Initiative Imaging Science Conference 11/2010

One of 150 investigators selected to participate.

Mentoring

Doctoral Students

Luis Jaimes, Ph.D., Electrical Engineering, USF <i>Now: Assistant Professor, Florida Polytechnic University</i>	6/2012 – 12/2015
Evren Bozgeyikli, Ph.D., Computer Science and Engineering, USF (Co-advised with Dr. Srinivas Katkooari)	8/2013 – 12/2016
Lal Bozgeyikli, Ph.D., Computer Science and Engineering, USF (Co-advised with Dr. Srinivas Katkooari)	8/2013 – 12/2016
Tylar Murray, Ph.D., Electrical Engineering, USF (Co-advised with Dr. Wilfrido Moreno)	6/2011 – 12/2016

Masters Students

Swathi Nukala, M.S., Electrical Engineering, USF <i>Now: Global Technology Associates</i>	8/2012 – 12/2013
Shujath Syed, M.S., Electrical Engineering, USF <i>Now: SRA International</i>	6/2012 – 6/2013
Sanjana Bontha, M.S., Chemical and Biomedical Engineering, USF	1/2013 – 5/2013
Vamshee Krishna Bhattiprolu, M.S., Electrical Engineering, USF <i>Now: PNC</i>	01/2012 – 12/2012
Shyam Sunder Manchikanti, M.S., Electrical Engineering, USF <i>Now: Fareportal</i>	01/2012 – 12/2012
Animikh Ghosh, M.S., Computer Science, University of Memphis (Co-advised with Dr. Santosh Kumar) <i>Now: Infosys</i>	8/2009 – 5/2010

Bachelors Students

Juan Lopez Marcano, B.S., Electrical Engineering, USF <i>Now: Intel Fellow & Google Generations Scholar</i>	8/2012 – 5/2014
Delquawn Hardy, B.S., Electrical Engineering, USF <i>Now: Lockheed-Martin</i>	1/2012 – 12/2012

Judge / Facilitator at USF Student Showcases

Electrical Engineering Senior Capstone Design Showcase College of Engineering Research Day USF Undergraduate Research Colloquium	5/2011 – 03/2015
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X-Labs Faculty Advisor

Helped X-Labs acquire space for creative outreach activities. X-Labs is a student-run club that gets high school and college students together to work on eye-catching projects, such as a 12-foot tall Tesla Coil that plays music and an unmanned aerial balloon. Their signature event is a popular show at USF’s annual Engineering EXPO.	08/2012 – 03/2015
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USF Capstone Senior Design Project Advisor

Rehabilibike by Delquawn Hardy: A hybrid electric rehabilitation bicycle designed for use in the outside world. Mr. Hardy received third place in the Senior Capstone Design contest. <http://rehabilibike.wordpress.com/>

Smart Pill Dispenser by John Headley and Monyo Stoev: A “smart” medication dispenser designed for people who forget to take their medicine. It keeps track of which medications are taken, reminds the user to take them, and dispenses them at the appropriate time. Mr. Headley submitted the project to the 2013 Florida Healthcare Innovation Competition and won a cash prize. <http://pillpedestal.com/blog/>

Teaching Experience

Computer Methods: Intro. to Programming (<i>redesigned</i>)	Fall 2014
Microprocessor Principles and Applications (<i>redesigned</i>)	Fall 2011, Spring 2012, Spring 2013
Digital Logic Lab	Spring 2010
Designing Personal Health Systems (<i>new course</i>)	Spring 2012, Fall 2012, Fall 2013, Fall 2014
Intro. to Electrical Systems - Digital Circuits (<i>redesigned</i>)	Fall 2013 (3 weeks)
Microprocessor Laboratory - TA Supervisor	Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013

Service to the Research Community

Conference Chair Positions

Doctoral Consortium Co-chair, IEEE Virtual Reality 2016
Publications Chair, ACM Wireless Health 2012-14
Publicity Chair, IEEE Wearable and Implantable Body Sensor Networks 2013
ACM Wireless Health 2013 Technical Session Chair: "Ain't Misbehavin"
ACM Wireless Health 2012 Technical Session Chair: "Intervention and Wireless Health"
Posters Co-chair for IEEE Virtual Reality 2012.

Program Committees

IEEE Virtual Reality (2010-13)
ACM Wireless Health (2012-16)
International Symposium on Visual Computing (2011-12)
ACM Virtual Reality Software and Technology (2009-10, 2015)
IEEE Symposium on Virtual Reality Software and Technology (2009-10)
ACM Body Area Networks (2013)
Human Computing and Social Computing Symposium (2016)

Conference and Journal Reviewer (in addition to above)

ACM Conference on Human Factors in Computing Systems
ACM Conference on Computer Supported Cooperative Work
IEEE International Conference on Pervasive Computing
IEEE Transactions on Visualization and Computer Graphics
International Journal of Human-Computer Systems
IEEE Transactions on Affective Computing
IEEE Internet of Things Journal

Grant Reviewer

NSF Panel Member (2016)
NSF Panel Member (2012, 2 times)

Service to the University

University of South Florida, Department of Electrical Engineering Committees

Curriculum Committee, January 2012 – March 2015
Capstone Design Committee, January 2012 – March 2015
Research Committee, August 2011 – July 2012

Affiliations/Memberships

Senior Member, Association for Computing Machinery (ACM)
ACM Special Interest Group on Computer-Human Interaction (SIGCHI)
Institute of Electrical and Electronics Engineers (IEEE)
IEEE Engineering in Medicine & Biology Society (EMBS)

Other Information

Languages

Proficient in Spanish
Working knowledge of Hebrew

References available upon request.