

REFERENCES

- Adachi, Y., T. Kumano, and K. Ogino. 1995. "Intermediate Representation for Stiff Virtual Objects." In *Proc. VRAIS '95, IEEE Virtual Reality Annual International Symposium*, Research Triangle Park, NC, March 11-15, pp. 203-210.
- Adelstein, B.D., E.R. Johnson, and S.R. Ellis. 1995. "Dynamic Response of Electromagnetic Spatial Displacement Trackers." To be published in *Presence*.
- Akamatsu, M. 1994. "Touch with a Mouse. A Mouse Type Interface Device with Tactile and Force Display." In *Proc. 3rd IEEE International Workshop on Robot and Human Communication*, Nagoya, Japan, July 18-20, pp. 140-144.
- American National Standards Institute. 1969. *American National Standard Specification for Audiometers S3.6*. New York: ANSI.
- Applewhite, H. 1994. "A New Ultrasonic Positioning Principle Yielding Pseudo-Absolute Location." In *Virtual Reality Software and Technology: Proceedings of the VRST '94 Conference*, Singapore, August 23-26, pp. 175-183.
- Azuma, R. August 1994. *Registration Errors in Augmented Reality*. NSF/ARPA Science and Technology Center for Computer Graphics and Scientific Visualization. Available on the WWW at URL <http://www.cs.unc.edu/~azuma>.
- Barfield, W. and T.A. Furness, III. 1995. *Virtual Environments and Advanced Interface Design*. Oxford University Press: New York, NY.
- Begault, D.R. 1995. "Virtual Acoustic Displays for Teleconferencing: Intelligibility Advantage for "Telephone Grade" Audio." In *Proc. 98th Convention of the Audio Engineering Society*, New York.
- Begault, D.R. 1994. *3-D Sound for Virtual Reality and Multimedia*. AP Professional: Boston, MA.
- Begault, D.R. 1993. "Head-Up Auditory Displays for Traffic Collision Avoidance System Advisories: A Preliminary Investigation." *Human Factors*, 35(4), pp. 707-717.

- Begault, D.R. and T. Erbe. 1993. "Multi-Channel Spatial Auditory Display for Speech Communication." In *Proc. 95th Convention of the Audio Engineering Society*, New York.
- Begault, D.R. and E.M. Wenzel. 1993. "Headphone Localization of Speech." *Human Factors*, 35(2), pp. 361-376.
- Benson, A.J. 1990. "Sensory Functions and Limitations of the Vestibular Systems." In R. Warren and A.H. Wertheim (Eds). *Perception and Control of Self Motion*. Lawrence Erlbaum Assoc.: Hillsdale, NJ.
- Berger, E.H. 1981. "Re-Examination of the Low-Frequency (50-1000 Hz) Normal Threshold of Hearing in Free and Diffuse Sound Fields." *Journal of the Acoustical Society of America*, 70, pp. 1635-1645.
- Bles, W. and J.M.B. Vianney de Jong. 1982. "Cervico-Vestibular and Visuo-Vestibular Interaction." *Acta Otolaryngol*, 94, pp. 61-72.
- Boff, K.R., L. Kaufman, and J.P. Thomas (Eds). 1986. *Handbook of Perception and Human Performance*. John Wiley and Sons: New York, NY.
- Bolanowski, S.J., G.A. Gescheider, R.T. Verrillo, and C.M. Checkosky. 1988. "Four Channels Mediate the Mechanical Aspects of Touch." *Journal of the Acoustical Society of America*, 84(5), pp. 1680-1694.
- Brandt, T., J. Dichgans, and E. Koenig. 1973. "Differential Effects of Central and Peripheral Vision for Egocentric and Exocentric Motion Perception." *Experimental Brain Research*, 16, pp. 476-491.
- Brooks, T.L. 1990. "Teleroptic Response Requirements." In *Proc. International Conference on Systems, Man, and Cybernetics*, Los Angeles, CA, November 4-7, pp. 113-120.
- Brooks, F.P. Jr., M. Ouh-Young, J.J. Batter, and P.J. Kilpatrick. 1990. "Project GROPE—Haptic Displays for Scientific Visualization." *Computer Graphics*, 24(4), pp. 177-185.
- Bryson, S. 1992. "Measurement and Calibration of Static Distortion of Position Data from 3D Trackers." In *Proc. SPIE Vol. 1669, Stereoscopic Displays and Applications III*, pp. 244-255.

- Bryson, S. 1993. "Effects of Lag and Frame Rate on Various Tracking Tasks." In *Proc. SPIE Vol. 1915, Stereoscopic Displays and Applications III*, pp. 155-166.
- Burdea, G., R. Goratowski, and N. Langrana. 1995. "Tactile and Force Sensing for Computerized Hand Diagnosis." In K. Morgan et al (Eds), *Interactive Technology and the New Paradigm for Healthcare: Proc. Medicine Meets Virtual Reality III*, San Diego, CA, January 19-22, pp. 60-69.
- Burdea, G. and P. Coiffet. 1994. *Virtual Reality Technology*. John Wiley and Sons: New York, NY.
- Burdea, G. and J. Zhuang. 1991. "Dextrous Telerobotics with Force Feedback—An Overview. Part 2: Control and Implementation." *Robotica*, 9, pp. 291-298.
- Cholewiak, R.W. and C.E. Sherrick. 1981. "A Computer-Controlled Matrix System for Presentation to the Skin of Complex Spatiotemporal Patterns." *Behavior Research Methods and Instrumentation*, 13(5), pp. 667-673.
- Clymer, M. and G. Graves. 1994. "New Approaches in Magnetic Sensing for Tracking Devices." In *Proc. SPIE Vol. 2177*, pp. 288-296.
- Corso, J.F. 1963. "Age and Sex Differences in Pure Tone Thresholds." *Archives of Otolaryngology*, 77, pp. 385-405.
- Cutkosky, M.R. and R.D. Howe. 1990. "Human Grasp Choice and Robotic Grasp Analysis." In *Dextrous Robot Hands*, pp. 5-31. Springer-Verlag: New York, NY.
- Davson, H. 1989. *Physiology of the Eye*. 5th Edition. Pergamon Press: New York, NY.
- Dede, C., R.B. Loftin, and J.W. Regian. 1994. "The Design of Artificial Realities to Improve Learning Newtonian Mechanics." In *Proc. East-West International Conference on Multimedia, Hypermedia, and Virtual Reality*, Moscow, Russia, September 14-16.
- Durlach, N. I. and A.S. Mavor (Eds). 1995. *Virtual Reality Scientific and Technological Challenges*. National Academy Press: Washington, DC.
- Eggleston, R.G., W.P. Janson, and S. Adapalli. 1993. "Manual Tracking Performance Using a Virtual Hand Controller: A Comparison Study." In *AGARD Conference Proceedings 541, Virtual Interfaces: Research and Applications*, pp. 10-1 to 10-7.

- Emura, S. and S. Tachi. 1994. "Sensor Fusion Measurement of Human Head Motion." In *Proc. IEEE International Workshop on Robot and Human Communication*, pp. 124-129.
- Fausti, S.A., R.H. Frey, D.A. Erickson, B.Z. Rappaport, E.J. Cleary, and R.E. Brummett. 1982. "A System for Evaluating Auditory Function from 8000 to 20000 Hz." *Journal of the Acoustical Society of America*, 66, pp. 1713-1718.
- Finch, M., V.L. Chi, R.M. Taylor, M. Falvo, S. Washburn, and R. Superfine. 1995. "Surface Modification Tools in a Virtual Environment Interface to a Scanning Probe Microscope." In *Proc. ACM Symposium on Interactive 3D Graphics*, Monterey, CA, April 9-12, pp. 13-18.
- Foxlin, F. and N. Durlach. 1994. "An Inertial Head-Orientation Tracker with Automatic Drift Compensation for Use with HMDs." In *Virtual Reality Software and Technology, Proceedings of the VRST '94 Conference*, Singapore, August 23-26, pp. 159-173.
- Fukui, Y. and M. Shimojo. 1994. "Recognition of Virtual Shape Using Visual and Tactile Sense under Optical Illusion." In *Proc. 3rd IEEE International Workshop on Robot and Human Communication*, Nagoya, Japan, July 18-20, pp. 294-298.
- Gomez, D., G. Burdea, and N. Langrana. 1995. "Integration of the Rutgers Master II in a Virtual Reality Simulation." In *Proc. IEEE VRAIS '95 International Symposium*, Research Triangle Park, NC, March 11-15, pp. 198-202.
- Gottschalk, S. and J.F. Hughes. 1993. "Autocalibration for Virtual Environments Tracking Hardware." In *Computer Graphics Proceedings, Annual Conference Series*, pp. 65-71.
- Greene, W.B. and J.D. Heckman. 1994. *The Clinical Measurement of Joint Motion*. American Academy of Orthopedic Surgeons: Rosemont, IL.
- Hancock, D. 1993. "Prototyping the Hubble Fix." *Spectrum*, 30(10), pp. 34-39.
- Hannaford, B. 1989. "A Design Framework for Teleoperators with Kinesthetic Feedback." *IEEE Trans. on Robotics and Automation*, 5(4), 426-434.
- Hasser, C.J. and M.W. Daniels. 1996a. "Tactile Feedback with Adaptive Controller for a Force-Reflecting Haptic Display. Part 2: Improvements and Evaluation." In *Proc. 15th Southern Biomedical Engineering Conference*, Dayton, OH, March 29-31.

- Hasser, C.J. March 1996b. Personal communication.
- Hasser, C.J. July 1995. *Force-Reflecting Anthropomorphic Hand Masters*. Crew Systems Directorate, Biodynamics and Biocommunications Division, Armstrong Laboratory. AL/CF-TR-1995-0110.
- Hasser, C.J. and J.M. Wesenberger. 1993. "Preliminary Evaluation of a Shape-Memory Alloy Tactile Feedback Display." In *DSC-Vol. 49, Advances in Robotics, Mechatronics, and Haptic Interfaces*, pp. 73-80.
- Hayward, V. 1995. "Towards a Seven Axis Haptic Device." In *Proc. IROS '95, IEEE/RSI International Conference on Intelligent Robots and Systems*, Pittsburgh, PA, August 5-9.
- Hendrix, C.M. 1995. *Exploratory Studies on the Sense of Presence in Virtual Environments as a Function of Visual and Auditory Display Parameters*. Available on the WWW at URL <http://www.hitl.washington.edu>.
- Hill, J.W. and J.K. Salisbury, Jr. November 1976. *Study to Design and Develop Remote Manipulator Systems*. SRI Project 4055. SRI International, Menlo Park, CA.
- Hinchcliffe, R. 1959. "The Threshold of Hearing as a Function of Age." *Acoustica*, 9, pp. 303-308.
- Howe, R.D., W.J. Peine, D.A. Kontarinis, and J.S. Son. November 1994. "Remote Palpation Technology for Surgical Applications." Submitted to *IEEE Engineering in Medicine and Biology Magazine*.
- Howe, R.D. 1992. "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation." In *Proc. IEEE Conference on Robotics and Automation*, Nice, France, May 12-14, pp. 1321-1326.
- Huang, J. and L.R. Young. 1981. "Sensation of Rotation About a Vertical Axis with a Fixed Visual Field in Different Illuminations and in the Dark." *Experimental Brain Research*, 41(2), pp. 172-183.
- Hubel, D. H. 1963. "The Visual Cortex of the Brain." *Scientific American*, 209(5).
- Hunter, I.W., T.D. Doukoglou, S.R. Lafontaine, P.G. Charette, L.A. Jones, M.A. Sagar, G.D. Mallinson, and P.J. Hunter. 1993. "A Teleoperated Microsurgical Robot and Associated Virtual Environment for Eye Surgery." *Presence*, 2(4), pp. 265-280.

- Ino, S., S. Shimizu, T. Odagawa, M. Sato, M. Takahashi, T. Izumi, and T. Ifukube. 1993. "A Tactile Display for Presenting Quality of Materials by Changing the Temperature of Skin Surfaces." In *Proc. IEEE 2nd International Workshop on Robot and Human Communication*, Tokyo, Japan, November 3-5, pp. 220-224.
- INTERACT. 1995. *The Gesture and Speech Integration Project*. Available on the WWW at URL <http://www.cs.cmu.edu/Web/Groups/interact/cal/cal.html>.
- International Standards Organization. 1975. *Standard Reference Zero for the Calibration of Pure-Tone Audiometers 389*. ISO: New York, NY.
- International Standards Organization. 1961. *Normal Equal-Loudness Contours for Pure Tones and Normal Threshold of Hearing under Free Field Listening Conditions R226*. ISO: New York, NY.
- Ishii, M. and M. Sato. 1994a. "A 3D Spatial Interface Device Using Tensed Strings." *Presence*, 3(1), pp. 81-86.
- Ishii, M. and M. Sato. 1994b. "Force Sensations in Pick-and-Place Tasks." In *DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1*, pp. 339-344.
- Iwata, H. and K. Matsuda. 1992. "Haptic Walkthrough Simulator: Its Design and Application to Studies on Cognitive Map." In *Proc. International Conference on Artificial Reality and Tele-Existence*, pp. 185-192.
- Jacob, R.J.K. 1995. "Eye Tracking in Advanced Interface Design." In W. Barfield and T.A. Furness (Eds), *Virtual Environments and Advanced Interface Design*, pp. 258-288. Oxford University Press: New York, NY.
- Jacobus, H.N., A.J. Riggs, C.J. Jacobus, and Y. Weinstein. 1992. "Implementation Issues for Telerobotic Handcontrollers: Human-Robot Ergonomics." In *Human-Robot Interaction*, pp. 284-314. Taylor and Francis: Washington, DC.
- Jewell, M. R, G.R. Chamberlin, D.D. Sheat, P. Cochrane, and D.J. McCartney. 1995. "3-D Imaging Systems for Video Communication Applications." In *Proc. SPIE Vol. 2409, Stereoscopic Displays and Virtual Reality II*, pp 4-10.
- Johansson, R.S. 1991. "How is Grasping Modified by Somatosensory Input?" In D.R. Humphrey and H.-J Freund (Eds), *Motor Control: Concepts and Issues*, pp. 331-355. John Wiley and Sons: New York, NY.

- Kalawsky, R. S. 1993. *The Science of Virtual Reality and Virtual Environments: A Technical, Scientific and Engineering Reference on Virtual Environments*. Addison-Wesley Publishing Company: Reading, MA.
- Kessler, G.D., L.F. Hodges, and N. Walker. 1994. *Evaluation of the CyberGlove as a Whole Hand Input Device*. Georgia Institute of Technology.
- Knasko, S.C. and A.N. Gilbert. 1990. "Emotional State, Physical Well-Being, and Performance in the Presence of Feigned Ambient Odor." *Journal of Applied Social Psychology*, 20(16), pp. 1345-1357.
- Kocian, D.F. and H.L. Task. 1995. "Visually Coupled Systems Hardware and the Human Interface." In W. Barfield and T.A. Furness (Eds), *Virtual Environments and Advanced Interface Design*, pp. 175-257. Oxford University Press: New York, NY.
- Kontarinis, D.A. and R.D. Howe. 1995. "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments." To appear in *Presence*.
- Kosslyn, S. E. 1994. *Image and Brain: The resolution of the imagery debate*. MIT Press: Cambridge, MA.
- Kosslyn, S. E. 1980. *Image and Mind*. Harvard University Press: Cambridge, MA.
- Krieg, J.C. 1992. "Accuracy, Resolution, Latency and Speed: Key Factors in Virtual Reality Tracking Environments." In *Proc. Virtual Reality '92, 3rd Annual Conference and Exhibition*, San Jose, CA, September, pp. 90-100.
- Krueger, M.W. 1996. Personal communication.
- Krueger, M.W. 1995. *Olfactory Stimuli in Virtual Reality Medical Training*. Artificial Reality Corporation, Vernon, CT.
- Laing, D.G. 1986. "Identification of Single Dissimilar Odors is Achieved by Humans with a Single Sniff." *Physiology and Behavior*, 37, pp. 163-170.
- LaMotte, R.H. 1978. "Intensive and Temporal Determinants of Thermal Pain." In D.R. Kenshalo (Ed.), *Sensory Functions of the Skin of Humans*. Plenum Press: NY.
- Landis, C. 1954. "Determinants of the Critical Flicker-Fusion Threshold." *Physiological Review*, 34, 259-286.
- Lipscomb, J. S. and W.L. Wooten. 1994. "Reducing Crosstalk Between Stereoscopic Views." In *SPIE Vol. 2177*, pp. 92-95.

- Magee, L.E. 1995. Personal communication.
- Mandelbaum, J. and L.L. Sloan. 1947. "Peripheral Visual Acuity." *American Journal of Ophthalmology*, 30, pp. 581-588.
- Massie, T.H. and J.K. Salisbury. 1994. "The PHANToM Haptic Interface: A Device for Probing Virtual Objects." In *DSC, Vol. 55-1, Dynamic Systems and Control: Vol. 1*, pp. 295-299.
- Massimino, M. and T. Sheridan. 1993. "Sensory Substitution for Force Feedback in Teleoperation." *Presence* 2(4), pp. 344-352.
- McKenna, M. and D. Zeltzer. 1992. "Three Dimensional Visual Display Systems for Virtual Environments." *Presence*, 1(4) pp. 421-458.
- Meyers, K., H. Applewhite, and F.A. Biocca. 1992. "A Survey of Position Trackers." *Presence*, 1(2), pp. 173-200.
- Millman, P. and J.E. Colgate. 1994. "Experimental Study of Haptic Information Pickup in Manipulation." In *Proc. SPIE, International Symposium on Photonics for Industrial Applications, Telemanipulator and Telepresence Technologies Conference*, Boston MA.
- Moller, A.R. 1983. "Changes in hearing measures with increasing age." In R. Hinchcliffe (Ed.), *Hearing and Balance in the Elderly*. Churchill-Livingstone: Edinburgh, UK.
- Morgan, C.T. 1965. *Physiological Psychology*. McGraw-Hill, Inc.: New York, NY.
- Napier, J.R. 1956. "The Prehensile Movements of the Human Hand." *Journal of Bone and Joint Surgery*, 38B(4), pp. 902-913.
- Naus, A. 1985. "The Occupational Meaning of Smell." *Journal of Hygiene, Epidemiology, Microbiology, and Immunology*, 29(1), pp. 29-36.
- Ouh-Young, M., D.V. Beard, and F.P. Brooks, Jr. 1989. "Force Display Performs Better than Visual Display in a Simple 6-D Docking Task." In *Proc. IEEE International Conference on Robotics and Automation*, May 14-19, pp. 1462-1466.
- Overbosch, P., R. de Wijke, Th. J.R. de Jonge, and E.P. Koster. 1989. "Temporal Integration and Reaction Times in Human Smell." *Physiology and Behavior*, 45, pp. 615-626.

- Patrick, N.M., T.B. Sheridan, and M.J. Massimino. 1990. "Design and Testing of a Non-Reactive, Fingertip, Tactile Display for Interaction with Remote Environments." In *Proc. SPIE Vol. 1837, Cooperative Intelligent Robotics in Space*, pp. 215-222.
- Pausch, P., M.A. Shackelford, and D. Proffitt. 1993. "A User Study Comparing Head-Mounted and Stationary Displays." In *Proc. IEEE Symposium on Research Frontiers in Virtual Reality*, pp. 41-45.
- Peters, R.A. April 1969. *Dynamics of the Vestibular System and Their Relation to Motion Perception, Spatial Disorientation, and Illusions*. NASA CR-1309, NASA.
- Reynier, F. and V. Hayward. March 1993. *Summary of the Kinesthetic and Tactile Function of the Human Upper Extremities*. McGill Research Center for Intelligent Machines, McGill University, Montreal, Canada.
- Richards, A. November 1994. *Stroboscopic Display Unit*. International Patent Application published by the World Intellectual Property Organization, No. WO 94/25899.
- Robinson, D.W., M.S. Shipton, and R. Hinchcliffe. 1981. "Audiometric Zero for Air Conduction." *Audiology*, 20, pp. 409-431.
- Robinson, D.W. and G.J. Sutton. 1979. "Age Effect in Hearing—A Comparative Analysis of Published Threshold Data." *Audiology*, 18, pp. 320-324.
- Robinson, D.W. and R.S. Dadson. 1956. "A Re-Determination of Equal-Loudness Relations for Pure Tones." *British Journal of Applied Physics*, 7, pp. 166-181.
- Scharf, B. and S. Buus. 1986. "Audition I: Stimulus, Physiology, Thresholds." In K.R. Boff, L. Kaufman, and J.P. Thomas (Eds), *Handbook of Perception and Human Performance, Volume I: Sensory Process and Perception*. John Wiley and Sons: New York, NY.
- Schlesinger, G. 1919. Der Mechanische Aufbau der Kuntstlichen Glieder. In M. Borchardt et al (Eds), *Ersatzglieder und Arbeitshilfen fur Kriegsbeschadigte und Unfallverletzte*. pp. 321-699. Springer-Verlag: Berlin, Germany.
- Schneider, W. 1988. "The Tactile Array Stimulator." *John Hopkins APL Technical Digest*, 9(1), pp. 39-43.
- Segal, N.L., T.D. Topolski, S.M. Wilson, K.W. Brown, and L. Araki. 1995. "Twin Analysis of Odor Identification and Perception." *Physiology and Behavior*, 57(3), pp. 605-609.

- Sherrick, C.E. 1984. "Basic and Applied Research on Tactile Aids for Deaf People: Progress and Prospects." *Journal of the Acoustical Society of America*, 75(5), pp. 1325-1342.
- Shimizu, Y. 1986. "Tactile Display Terminal for Visually Handicapped." *Displays*, July, pp. 116-120.
- Shimoga, K.B. 1993a. "A Survey of Perceptual Feedback Issues in Dextrous Telemanipulation: Part I. Finger Force Feedback." In *Proc. IEEE Annual Virtual Reality International Symposium*, Seattle, Washington, September 18-22, pp. 263- 270.
- Shimoga, K.B. 1993b. "A Survey of Perceptual Feedback Issues in Dextrous Telemanipulation: Part II. Finger Touch Feedback." In *Proc. IEEE Annual Virtual Reality International Symposium*, Seattle, Washington, September 18-22, pp. 271-279.
- Slater, M., M. Usoh, and A. Steed. 1994. "Steps and Ladders in Virtual Reality." In *Proc. VRST '94, Virtual Reality Software and Technology*, Singapore, 23-26 August, pp. 45-54.
- Stelmachowicz, P.G., M.P. Gorga, and J.K. Cullen. 1982. "A Calibration Procedure for the Assessment of Thresholds Above 8000 Hz." *Journal of Speech and Hearing Research*, 25, pp. 681-683.
- Strickland, D., A. Patel, C. Stovall, J. Palmer, and D. McAllister. 1994. "Self Tracking of Human Motion for Virtual Reality Systems. In *SPIE Vol. 2177*, pp. 278-287.
- Sturman, D.J. and D. Zeltzer. 1994. "A Survey of Glove-Based Input." *IEEE Computer Graphics and Applications*, January, pp. 30-39.
- Sturman, D.J. and D. Zeltzer. 1993. "Utility of Whole-Hand Input." In *Proc. SPIE Vol. 2057*, pp. 282-291.
- Summer, S. K. and B. Katz. 1994. *Device for the Creation of Three-Dimensional Images*. U. S. Patent No. 5,311,357.
- Sutter, P.H., J.C. Iatridis, and N.V. Thakor. 1989. "Response to Reflected-Force Feedback to Fingers in Teleoperations." In *Proc. NASA Conference on Space Telerobotics*, NASA JPL.
- Tan, H.Z., M.A. Srinivasan, B. Eberman, and B. Cheng. 1994. "Human Factors for the Design of Force-Reflecting Haptic Interfaces. In *DSC, Vol. 55-1, Dynamic Systems and Control: Vol. 1*. pp. 353-359.

- Tanner, S. 1993. "The Use of Virtual Reality at Boeing's Huntsville Laboratories." In *Proc. 1993 IEEE Virtual Reality Annual International Symposium*, September 18-22, pp. 14-19.
- Tecumeh, W. and G. Kramer. 1994. "Sonifying the Body Electric: Superiority of an Auditory over a Visual Display in a Complex, Multivariate System." In *Santa Fe Institute Studies in the Science of Complexity, Proc. Vol. XVIII*, pp. 307-325. Addison-Wesley: Reading, MA.
- Wang, J.-F., R. Azuma, G. Bishop, V. Chi, J. Eyles, and H. Fuchs. 1990. "Tracking a Head-Mounted Display in a Room-Sized Environment with Head-Mounted Camera." In *SPIE, Technical Symposium on Optical Engineering and Photooptics in Aerospace Sensing*, Orlando, Florida, April.
- Ware, C., C. Gobrecht, and M. Paton. 1995. "Algorithm for Dynamic Disparity Adjustment." In *Proc. SPIE Vol. 2409, Stereoscopic Displays and Virtual Reality II*, pp. 150-156.
- Ware, C. and R. Balakrishnan. December 1994. "Reaching for Objects in VR Displays: Lag and Frame Rate." *ACM Transactions on Computer-Human Interaction*, 1(4), pp. 331-356.
- Ware, C., K. Arthus, and K.S. Booth. 1993. "Fish Tank Virtual Reality. In *Interchi '93: Bridges between Worlds*, pp. 37-42. Addison-Wesley: Reading, MA.
- Weissler, P.B. 1968. "International Standard Reference Zero for Audiometers." *Journal of the Acoustical Society of America*, 44, pp. 264-275.
- Wenzel, E.M. 1994. "Spatial Sound and Sonification." In G. Kramer (Ed.), *Santa Fe Institute Studies in the Sciences of Complexity, Proceedings Volume XVIII*. Addison-Wesley: New York, NY.
- Wenzel, E.M., M. Arruca, D.J. Kistler, and F.L. Wightman. 1993. "Localization Using Nonindividualized Head-Related Transfer Functions." *Journal of the Acoustical Society of America*, 94(1), pp. 111-123.
- Wenzel, E.M. 1992. "Localization in Virtual Acoustic Displays." *Presence*, 1(1), pp. 80-107.
- Wiker, S.F., E. Hershkowitz, and J. Zilk. 1989. "Teleoperator Comfort and Psychometric Stability: Criteria for Limiting Master-Controller Forces of Operation and Feed-

- back During Telemanipulation.” In *Proc. NASA Conference on Space Telerobotics*, Vol. I, Pasadena, CA, January/February, pp. 99-107.
- Wise, S., J. Rosen, W. Gardner, E. Sabelman, E. Valainis, Y. Wong, K. Glass, J. Drace, and J. Rosen. 1990. “Evaluation of a Fiber-Optic Glove for Semi-Automated Goniometric Measurements.” *Journal of Rehabilitation Research and Development*, 27(4), pp. 411-424.
- Yarnitsky, D. and J.L. Ochoa. 1991. “Warm and Cold Specific Somatosensory Systems.” *Brain*, 114, pp. 1819-1826.
- Zellner, D.A., A.M. Bartoli, and R. Eckard. 1991. “Influence of Color on Odor Identification and Liking Ratings.” *American Journal of Psychology*, 104(4), pp. 547-561.
- Zerkus, M., B. Becker, J. Ward, L. Halvorsen. *Thermal Feedback in Virtual Reality and Telerobotic Systems*. Technical Report N95-15987. NASA Scientific and Technical Information Office, NASA.
- Zhai, S. and P. Milgram. 1993. “Human Performance Evaluation of Manipulation Schemes in Virtual Environments.” In *Proc. 1st Virtual Reality Annual International Symposium (VRAIS)*, Seattle, pp. 155-161.
- Zhai, S. 1993. “Investigation of Feel for 6DOF Inputs: Isometric and Elastic Rate Control for Manipulation in 3D Environments.” In *Proc. Human Factors and Ergonomics Society 37th Annual Meeting*, pp. 323-327.