

BIBLIOGRAPHY

- Ackerman, D., *A Natural History of the Senses* (New York: Random House, 1990)
- Aish, A. and P. Noakes, "Architecture Without Numbers: CAAD Based on a 3-D Modeling System," *Computer-Aided Design* 16:6 (Nov. 1984): 321–328
- Arias, E., Eden, H. and Fischer, G., "Enhancing Communication, Facilitating Shared Understanding, and Creating Better Artifacts by Integrating Physical and Computational Media for Design." in *Proceedings of Designing Interactive Systems: Processes, Practices, Methods, and Techniques, Amsterdam, August 1997*, ACM, 1-12
- Arnheim, R., *Art & Visual Perception: A psychology of the creative eye* (Berkeley: University of California Press, 1963)
- Arnheim, R., *Toward a Psychology of Art* (Berkeley: University of California Press, 1966)
- Balakrishnan, R., T. Baudel, G. Kurtenbach, and G. W. Fitzmaurice, "The Rockin' Mouse: Integral 3-D Manipulation on a Plane," *Proceedings of SIGCHI '97* (New York: ACM Press, 1997): 311–318
- Balakrishnan, R., G. W. Fitzmaurice, G. Kurtenbach, and K. Singh, "Exploring Interactive Curve and Surface Manipulation Using a Bend and Twist Sensitive Input Strip," *Proceedings of ACM Symposium on Interactive 3D Graphics '99* (New York: ACM Press, 1999): 311–318
- Bazjanac, V., "The Promises and the Disappointments of Computer-Aided Design," in *Reflections on Computer Aids to Design and Architecture*, Negroponte, ed. (New York: Mason/Charter, 1975): 17–26
- Ben-Joseph, E., H. Ishii, J. Underkoffler, B. Piper, and L. Yeung, "Urban Simulation and the Luminous Planning Table: Bridging the Gap between the Digital and the Tangible," *Journal of Planning in Education and Research* 21, 195–202
- Bilda, Z. and H. Demirkan, "An insight on designers' sketching activities in traditional versus digital media," *Design Studies* 24:1 (Great Britain: Elsevier Science Ltd., Jan. 2003): 27–49
- Brereton, M. and B. McGarry, "An Observational Study of How Objects Support Engineering Design Thinking and Communication: Implications for the design of tangible media," *Proceedings of SIGCHI '00* (New York: ACM Press, 2000): 217–224
- Bryan, W. L. and N. Harter, "Studies on the telegraphic language," *Psychological Review* 6 (1899): 345–375
- Burdea, G. C., *Force and Touch Feedback for Virtual Reality* (New York: Wiley, 1996)

- Buxton, W., *Directory of Sources for Input Technology, 2001* (www.billbuxton.com/InputSources.html)
- Buxton, W. and B. Myers, "A study in two-handed input," *Proceedings of SIGCHI '86* (New York: ACM Press, 1986): 321–326
- Buxton, W., R. Hill, and P. Rowley, P., "Issues and techniques in touch-sensitive tablet input," *Proceedings of SIGGRAPH '85* (New York: ACM Press, 1985): 215–223
- Buxton, W., "There's More to Interaction than Meets the Eye: Some Issues in Manual Input," in *User Centered System Design: New Perspectives on Human-Computer Interaction*, Norman, D. A. and Draper, S. W., eds. (New Jersey: Lawrence Erlbaum Associates, 1986): 319–337
- Buxton, W., "Touch, Gesture & Marking," Chapter 7 in *Readings in Human Computer Interaction: Toward the Year 2000*, R. M. Baecker, J. Grudin, W. Buxton, and S. Greenberg, eds. (San Francisco: Morgan Kaufmann Publishers, 1995)
- Chaiklin, S. and J. Lave, *Understanding Practice: Perspectives on Activity and Context* (London: Cambridge University Press, 1993)
- Coons, S., "Reflections Beyond Sketchpad," in *Reflections on Computer Aids to Design and Architecture*, Negroponte, ed. (New York: Mason/Charter, 1975): 27–29
- Cooper, A., *The Inmates Are Running the Asylum: Why High-Tech Products Drive Us Crazy and How to Restore the Sanity* (Indianapolis: Sams Publishing, 1999)
- Csikszentmihalyi, M., *Flow: The Psychology of Optimal Experience* (New York: HarperCollins, 1990)
- Csikszentmihalyi, M. and R. E. Robinson, *The Art of Seeing: An Interpretation of the Aesthetic Encounter* (Los Angeles: J. Paul Getty Museum, 1990)
- Debevec, P., C. Taylor, and J. Malik, "Modeling and rendering architecture from photographs: A hybrid geometry and image-based approach," *Proceedings of SIGGRAPH '97* (New York: ACM Press, 1997): 11–20
- Fitzmaurice, G. W., R. Balakrishnan, and G. Kurtenbach, "Sampling, Synthesis, and Input Devices," *Communications of the ACM* 42:8 (Aug. 1999): 55–63
- Fitzmaurice, G., H. Ishii, and W. Buxton, "Bricks: Laying the foundations for graspable user interfaces," *Proceedings of SIGCHI '95* (New York: ACM Press, 1995): 432–449
- Fradon, J., *Handbook of Modern Sensors: Physics, Designs, and Applications* (New York: Springer-Verlag, 1996)
- Focillon, H., *The Life of Forms in Art* (New York: Zone Books, 1992 ed.)
- Frazer, J. "Three-Dimensional Data Input Devices," *Computer/Graphics in the Building Process* (Washington, 1982)

- Gelernter, D., *Machine Beauty: Elegance and the Heart of Technology* (New York: Basic Books, 1998)
- Gershensfeld, N., *When Things Start to Think* (New York: Henry Holt, 1999)
- Gerstner, K., *The Forms of Color: The interaction of visual elements* (Cambridge: MIT Press, 1986)
- Goel, V., "Cognitive Role of Ill-Structured Representations in Preliminary Design," *Proceedings of Visual and Spatial Reasoning in Design* (University of Sydney, 1999): 131–145
- Goldstein, E. B., *Sensation and Perception, 4th ed.* (Pacific Grove: Brooks/Cole, 1996)
- Goodman, N., *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Hackett Publishing, 1976)
- Gorbet, M. G., M. Orth, and H. Ishii, "Triangles: Tangible Interface for Manipulation and Exploration of Digital Information Topography," *Proceedings of SIGCHI '98* (New York: ACM Press, 1998): 49–56
- Grossman, T., R. Balakrishnan, G. Kurtenbach, G. Fitzmaurice, A. Khan, and W. Buxton, "Creating Principal 3D Curves with Digital Tape Drawing," *Proceedings of SIGCHI '02* (New York: ACM Press, 2002): 121–128
- Grossman, T., R. Balakrishnan, G. Kurtenbach, G. Fitzmaurice, A. Khan, and W. Buxton, "Interaction techniques for 3D modeling on large displays," *Proceedings of the ACM Symposium on Interactive 3D Graphics '01* (New York: ACM Press, 2001): 17–23
- Harrison, S. and S. Minneman, "A Bike in Hand: A study of 3-D objects on design," in *Analyzing Design Activity*, N. Cross, H. Christiaans, and K. Dorst, eds. (New York: Wiley, 1996)
- Hinckley, K., R. Pausch, J. Goble, N. Kassell, "Passive Real-World Interface Props for Neurosurgical Visualization," *Proceedings of SIGCHI '94* (New York: ACM Press, 1994): 452–458
- Holtzman, S. R., *Digital Mantras: The Languages of Abstract and Virtual Worlds* (Cambridge: MIT Press, 1994)
- Holtzman, S. R., *Digital Mosaics: The Aesthetics of Cyberspace* (New York: Simon & Schuster, 1998)
- Howe, R.D., (<http://biorobotics.harvard.edu/research.html>)
- Hsiao, K., *Fast Multi-Axis Tracking of Magnetically Resonant Passive Tags: Methods and Applications* (MIT: Master's Thesis, 2001)
- Isen, A. M., "Positive affect," In T. Dalgleish & M. Power (Eds.), *The Handbook of Cognition and Emotion* (London: Wiley, 1999) 521–539

Ishii, H. and B. Ullmer, "Tangible Bits: Towards Seamless Interfaces between People, Bits, and Atoms," *Proceedings of SIGCHI '97* (New York: ACM Press, 1997): 234–241

Ishii, H., Underkoffler, J., Chak, D., Piper, B., Ben-Joseph, E., Yeung, L., Kanji, Z. "Augmented Urban Planning Workbench: Overlaying Drawings, Physical Models and Digital Simulation," in *Proceedings of Conference on IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR '02)*, (Darmstadt, Germany, Sept. 30 - October 1, 2002)

Kabbash, P., W. Buxton, and A. Sellen, "Two-Handed Input in a Compound Task," *Proceedings of SIGCHI '94* (New York: ACM Press, 1994): 417–423

Kabbash, P., I. S. MacKenzie, and W. Buxton, "Human performance using computer input devices in the preferred and non-preferred hands," *Proceedings of InterCHI '93* (New York: ACM Press, 1993): 474–481

Kitamura, Y., "ActiveCube," *Abstracts and Applications of SIGGRAPH '00* (New York: ACM Press, 2000): 76

Kurtenbach, G., G. Fitzmaurice, T. Baudel, and W. Buxton, "The design and evaluation of a GUI paradigm based on tablets, two-hands, and transparency," *Proceedings of SIGCHI '97* (New York: ACM Press, 1997): 35–42

Lee, J., "HandSCAPE," *Abstracts and Applications of SIGGRAPH '99* (New York: ACM Press, 1999): 168

Lee, S., W. Buxton, and K. C. Smith, "A Multi-Touch Three Dimensional Touch-Sensitive Tablet," *Proceedings of SIGCHI '85* (New York: ACM Press, 1985): 21–26

Loomis, J. M., "Distal attribution and presence," *Presence 1:1*, 113–119

Machover, T., "Hyperinstruments: A Composer's Approach to the Evolution of Intelligent Musical Instruments," *Cyberarts*, 67–76

Massie, T., and J. K. Salisbury, "The Phantom Haptic Interface: A Device for Probing Virtual Objects," *Proceedings of ASME International Mech. Eng.*, International Society of Mechanical Engineers (New York, 1994)

Massie, T., "A Tangible Goal for 3D Modeling," *IEEE Computer Graphics and Applications*, 18, 3, (1998): 62–65

McCullough, M., *Abstracting Craft: The Practiced Digital Hand* (Cambridge: MIT Press, 1998)

Milne, M., "Whatever Became of Design Methodology?" in *Reflections on Computer Aids to Design and Architecture*, Negroponte, ed. (New York: Mason/Charter, 1975): 30–36

Mitchell, W. J., *The Logic of Architecture: Design, Computation, Cognition* (Cambridge: MIT Press, 1990)

Mitchell, W. J. and M. McCullough, *Digital Design Media: A Handbook for Architects and Design Professionals* (New York: Van Nostrand Reinhold, 1991)

- Murray, J.H., *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Cambridge: MIT Press, 1997)
- Negroponte, N., *Being Digital* (New York: Random House, 1995)
- Negroponte, N., ed., *Reflections on Computer Aids to Design and Architecture* (New York: Mason/Charter, 1975)
- Norman, D. A., *The Design of Everyday Things* (New York: Doubleday, 1988)
- Norman, D. A., *The Invisible Computer: Why Good Products Can Fail, The Personal Computer Is So Complex, and Information Appliances Are the Answer* (Cambridge: MIT Press, 1999)
- Orth, M. A., *Sculpted Computational Objects with Smart and Active Computing Materials* (MIT: Ph.D. Thesis, 2001)
- Papert, S., *Mindstorms: Children, Computers, and Powerful Ideas* (New York: Basic Books 1993)
- Joseph A. Paradiso and Neil Gershenfeld, "Musical Applications of Electric Field Sensing," *Computer Music Journal* 21(2), Summer 1997, pp. 69-89.
- Paradiso, J. A., K. Hsiao, Y. Benbasat, and Z. Teegarden, "Design and Implementation of Expressive Footwear," *IBM Systems Journal* 39:3&4 (2000): 511-529
- Patten, J., Ishii, H., Hines, J., Pangaro, G., "Sensetable: A Wireless Object Tracking Platform for Tangible User Interfaces," *Proceedings SIGCHI 01*, (New York: ACM Press, 2001): 253-260
- Pawluk, D.T.V. and R. D. Howe, "Dynamic lumped element response of the human fingerpad," *ASME Journal of Biomechanical Engineering* 121(6): 605-611, 1999
- Peine, W. J., P. S. Wellman, and R. D. Howe, "Temporal Bandwidth Requirements for Tactile Shape Displays," *Sixth Annual Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, ASME International Mechanical Engineering Congress and Exposition* (Dallas, 1997): 107-113
- Peine, W. J. and R. D. Howe, "Do humans sense finger shape or distributed pressure when detecting a lump in soft tissue?" submitted to the *Seventh Annual Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, ASME International Mechanical Engineering Congress and Exposition* (Anaheim, 1998)
- Pentland, A., "Perceptual Intelligence," *Communications of the ACM* 43:3 (March 2000): 35-44
- Peterson, S., *The Craft and Art of Clay* (Woodstock, N.Y.: The Overlook Press, 1996)
- Pincherle, M., *The World of the Virtuoso*, trans. by Lucile H. Brockway (New York: Norton, 1963)

- Piper, B.T.F., *The Illuminated Design Environment: A 3-D Tangible Interface for Landscape Analysis* (MIT: Masters Thesis, 2002)
- Piper, B., Ratti, C., Ishii, H. "Illuminating Clay: A Tangible Interface with Potential GRASS Applications," *Proceedings of the Open Source GIS - GRASS User's Conference 2002* (Trento, Italy, September 2002)
- Piper, B., C. Ratti, and H. Ishii, "Illuminating Clay: A 3-D Tangible Interface for Landscape Analysis," *Proceedings of SIGCHI '02* (New York: ACM Press, 2002)
- Polanyi, M., *The Tacit Dimension* (New York: Doubleday and Co., 1967)
- Raskar, R., G. Welch, M. Cutts, A. Lake, L. Stein, and H. Fuchs, "The office of the future: A unified approach to image-based modeling," *Proceedings of SIGGRAPH '98* (New York: ACM Press, 1998): 179–188
- Raskar et al., "Shader Lamps: Animating Real Objects with Imaged-Based Illuminations," *Proceedings of the 12th Eurographics Workshop on Rendering* (2001)
- Resnick, M., R. Berg, M. Eisenberg, and S. Turkle, *Beyond Black Boxes: Bringing Transparency and Aesthetics Back to Scientific Instruments* (Project Proposal, 1997)
- Resnick, M., A. Bruckman, and F. Martin, "Pianos, Not Stereos," *Interactions*, 111:5 (Sept.–Oct. 1996): 41–50
- Resnick, M., F. Martin, R. Berg, R. Borovoy, V. Colella, K. Kramer, and B. Silverman, "Digital Manipulatives: New Toys to Think With," *Proceedings of SIGCHI '98* (New York: ACM Press, 1998): 281–287
- Ryall et al., "Physical Constructions Kit," *Proceedings of SIGGRAPH '00* (Los Angeles: ACM Press, 2000)
- Rybczynski, W., *One Good Turn: A Natural History of the Screwdriver and the Screw* (New York: Scribner, 2000)
- Schmidt, R., "Control Process in Motor Skills," *Exercise and Sports Sciences Review* (1976): 229–261
- Schkolne et al., "Surface Drawing," *Proceedings of SIGCHI '01* (New York: ACM Press, 2001)
- Schon, D. A., "Designing as a Reflective Conversation with the Materials of a Design Situation," *Research in Engineering Design* 3 (New York: Springer-Verlag, 1994): 131–147
- Schon, D. A., *The Design Studio: An Exploration of its Traditions and Potentials* (London: RIBA Publications Limited, 1985)
- Schon, D. A., *The Reflective Practitioner: How professionals think in action* (New York: Basic Books, 1983)
- Simon, H. A., *The Sciences of the Artificial* (Cambridge: MIT Press, 1969)

Sinclair, M., "The Haptic Lens," *Visual Proceedings of SIGGRAPH '97* (New York: ACM Press, 1997): 179

Spillers, W., "Some Thoughts on Automated Design," in *Reflections on Computer Aids to Design and Architecture*, Negroponte, ed. (New York: Mason/Charter, 1975): 61–72

Sutherland, I., "Structure in Drawings and The Hidden-Surface Problem," in *Reflections on Computer Aids to Design and Architecture*, Negroponte, ed. (New York: Mason/Charter, 1975): 73–85

Tsang, M, G. Fitzmaurice, G. Kurtenbach, A. Khan, and W. Buxton, "Boom Chameleon: Simultaneous capture of 3D viewpoint, voice and gesture annotations on a spatially-aware display," Alias|Wavefront, submitted for publication (2002)

Ullmer, B. and H. Ishii, "Emerging Frameworks for Tangible User Interfaces," *IBM Systems Journal* 39:3&4 (2000): 915–931

Underkoffler, J., B. Ullmer, and H. Ishii, "Emancipated Pixels: Real-World Graphics in the Luminous Room," *Proceedings of SIGGRAPH '99* (New York: ACM Press, 1999): 385–392

Wang, Y., A. Biderman, B. Piper, C. Ratti, and H. Ishii
(<http://tangible.media.mit.edu/projects/SandScape/SandScape.htm>)

Weiser, M., "The computer for the 21st century," *Scientific American* (Sept. 1991): 933–940

Wellner, P., Mackay, W., and Gold, R., "Computer Augmented Environments: Back to the Real World," *CACM* 36:7, July 1993