

References

- [Akingbade 03] Akingbade A., Finley T., Jackson D., Patel P. and Rodger S., "JAWAA: easy web-based animation from CS 0 to advanced CS courses," *Proceedings of the 34th SIGCSE Technical Symposium on Computer Science Education*, Reno, NV, 2003, pp. 162–166.
- [Arnheim 69] Arnheim R., *Visual Thinking*, 1st ed., University of California Press, 2nd ed., London, Faber and Faber, 1969.
- [Astrachan 03] Astrachan O., "Bubble Sort: An Archaeologic Algorithmic Analysis," *ACM SIGCSE Bulletin*, Vol. 35, No. 1, 2003, pp. 1–5.
- [Badre 89] Badre A. and Allen J., "Graphic language representation and programming behavior," *Designing and using human-computer interfaces and knowledge based systems*, Slavendy G. and Smith M. eds., Elsevier, Amsterdam. 1989, pp. 59–65.
- [Badre 92] Badre A., Beranek M., Morris J. and Stasko J., "Assessing program visualization systems as instructional aids," Tomek, I., editor, *Computer Assisted Learning, ICCAL '92*. Vol. 602 of *Lecture Notes in Computer Science*, Springer-Verlag, Wolfville. Nova Scotia, Canada, June 1992, pp. 87–99.
- [Baecker 68] Baecker R., "Experiments in On-Line Graphical Debugging: The Interrogation of Complex Data Structures," *Proceedings of the First Hawaii International Conference on the System Sciences*, January 1968, pp. 128–129.
- [Baecker 69a] Baecker R., *Interactive Computer-Mediated Animation*, Ph.D. Thesis. M.I.T. Department of Electrical Engineering, April 1969. Reprinted as M.I.T. *Project MAC TR-61*.
- [Baecker 69b] Baecker R., "Picture-driven animation," *Spring Joint Computer Conference*, volume 34, AFIPS Press, 1969, pp. 273–288.
- [Baecker 70] Baecker R., Smith L. and Martin E., *GENESYS – An Interactive Computer Mediated Animation System*, 17 minute color sound film, M.I.T. Lincoln Laboratory, 1970.
- [Baecker 73] Baecker R., "Towards Animating Computer Programs: A First, Progress Report," *Proceedings of the Third NRC Man-Computer Communications Conference*, May 1973, 4.1–4.10.
- [Baecker 74] Baecker R., "Interactive computer GENESYS mediated animation," John Halas, editor, *Computer Animation*, Hastings House, New York, NY, 1974, pp. 97115.
- [Baecker 75] Baecker R., "Two Systems which Produce Animated Representations of the Execution of Computer Programs," *SIGCSE Bulletin*, Vol. 7, No. 1, February 1975, pp. 158–167.
- [Baecker 81] Baecker R., with the assistance of Dave Sherman, *Sorting out Sorting*, 30 minute color sound film, Dynamic Graphics Project, University of Toronto, 1981. Excerpted and "reprinted" in *SIGGRAPH Video Review*, 7, 1983.
- [Baecker 98a] Baecker, R., "Sorting Out Sorting: A Case Study of Software Visualization for Teaching Computer Science," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 369–381.
- [Baecker 98b] Baecker, R., Price, B., "The Early History of Software Visualization," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 29–34.

- [Baker 95] Baker J., Cruz I., Liotta G. and Tamassia R., "A New Model for Algorithm Animation Over the WWW," *ACM Computing Surveys*, Symposium on Multimedia Systems, Vol. 27, No. 4, 1995, pp. 568–572.
- [Baskerville 85] Baskerville D., "Graphic presentation of data structures in the DBX debugger," Technical Report UCB/CSD 86/260, University of California at Berkeley, Berkeley, CA 1985.
- [Bauer 93] Bauer M. and Johnson-Laird P., "How diagrams can improve reasoning," *Psychological Science*, Vol. 4, No. 6, 1993, pp. 372–378.
- [Bazik 98] Bazik, J., Tamassia R., Reiss, S., Dam van, A., "Software Visualization in Teaching at Brown University," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 383–398.
- [Ben-Ari 02] Ben-Ari M., Myller N., Sutinen E. and Tarhio J., "Perspectives on program animation with Jeliot," *Software Visualization: International Seminar*. Dagstuhl Castle, Germany, Lecture Notes in Computer Science Vol. 2269, 2002, pp. 31–45.
- [Bentley 91a] Bentley J. and Kernighan B., "A System for Algorithm Animation: Tutorial and User Manual," *Computing Systems*, Vol. 4, No. 1, 1991, pp. 5–30.
- [Bentley 91b] Bentley J. and Kernighan B., "A System for Algorithm Animation (Tutorial and User Manual)," AMT Bell Laboratories, Murray Hill, New Jersey 07974, Computing Science Technical Report 132, August 1991].
- [Bertin 83] Bertin J., *Semiology of Graphics*, University of Wisconsin Press, Madison, WI, 1983.
- [Birch 95] Birch M., Boroni C., Goosey F., Patton S., Poole D., Pratt C. and Ross R., "DYNALAB: A Dynamic Computer Science Laboratory Infrastructure Featuring Program Animation," *Proceedings of the Twenty-Sixth SIGCSE Technical Symposium on Computer Science Education*, Nashville, TN, 1995, pp. 29–33.
- [Blackwell 97] Blackwell, "Correction: A Picture is Worth 84.1 Words," *Proceedings of the First ESP Student Workshop*, Kahn C., editor, 1997, pp. 15–22.
- [Booth 75] Booth K., *PQ Trees*, 12-minute color silent film, 1975.
- [Braune 00] Braune B. and Wilhelm R., "Focusing on Algorithm Explanation," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 6, No. 1, 2000, pp. 1–7.
- [Brown 83] Brown M., Meyrowitz N. and van Dam A., "Personal Computer Networks and Graphical Animation: Rationale and Practice for Education," *ACM SIGCSE Bulletin*, Vol. 15, No. 1, Feb. 1983. pp. 296–307.
- [Brown 84] Brown, M.H. and Sedgewick R., "A System for Algorithm Animation," *Computer Graphics*, July 1984, pp.177–186.
- [Brown 85a] Brown M. and Sedgewick R., "Techniques for Algorithm Animation," *IEEE Software*, Vol. 2, No. 1, January 1985, pp. 28–39.
- [Brown 85b] Brown G., Carling R., Herot C., Kramlich D. and Souza P., "Program visualization: graphical support for software development," *Computer*, Vol. 18, No. 8, August 1985, pp. 27–35.
- [Brown 88a] Brown M., *Algorithm Animation*, MIT Press, Cambridge MA, 1988.
- [Brown 88b] Brown M., "Exploring Algorithms Using BALSAs-II," *Computer*, Vol. 21, No. 5, May 1988. pp. 14–36.
- [Brown 88c] Brown M., "Perspectives on Algorithm Animation," *Proceedings of the ACM SIGCHI '88 Conference on Human Factors in Computing Systems*. ACM, May 1988, Washington D. C., pp. 33–38.
- [Brown 91] Brown M., "ZEUS: A system for algorithm animation and multi-view editing," *Proceedings of the 1991 IEEE Workshop on Visual Languages*, Kobe, Japan, October 1991, pp. 4–9.
- [Brown 92] Brown M. and Hershberger J., "Color and Sound in Algorithm Animation," *Computer*, Vol. 25, No. 12, December 1992, pp. 52–63.

- [Brown 93] Brown M. and Najork M., "Algorithm Animation using 3D Interactive Graphics," *Proceedings of the 1993 ACM Symposium on User Interface Software and Technology*, Atlanta, GA, November 1993, pp. 93–100.
- [Brown 96] Brown M. and Najork M., "Collaborative Active Textbooks: A Web-Based Algorithm Animation System for an Electronic Classroom," *Proceedings of the 1996 IEEE International Symposium on Visual Languages*, Boulder, CO, September 1996, pp. 266–275.
- [Brown 97] Brown M. and Najork M., "Collaborative Active Textbooks" *Journal of Visual Languages and Computing*, Vol. 8, No. 4, August 1997, pp. 453–486.
- [Brown 98a] Brown, M., Sedgewick R., "Interesting Events," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998
- [Brown 98b] Brown, M., "A Taxonomy of Algorithm Animation Displays," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 35–42.
- [Brown 98c] Brown, M., Hershberger, J., "Fundamental Techniques for Algorithm Animation Displays," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 81–89.
- [Brown 98d] Brown, M., Hershberger, J., "Program Auralization," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1988, pp. 137–143.
- [Brown 98e] Brown, M., Najork M., "Algorithm Animation Using Interactive 3D Graphics," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 119–135.
- [Byrne 96] Byrne M., Catrambone R. and Stasko J., "Do Algorithm Animations Aid Learning?", Technical Report GIT-GVU-96-18, GVU Center, Georgia Institute of Technology, Atlanta, GA, August 1996.
- [Chang 87] Chang S., "Visual languages: A tutorial and survey," *IEEE Software*, Vol. 4, No. 1, January 1987, pp. 29–39.
- [Chang 02] Chang D., Dooley L. and Tuovinen J., "Gestalt Theory in Visual Screen Design – A New Look at an Old Subject," *Proceedings of the Seventh World Conference on Computers in Education: Australian Topics*, Vol. 8, Copenhagen, Denmark, 2002, pp. 5–12.
- [Ciesielski 01] Ciesielski V. and McDonald P., "Using Animation of State Space Algorithms to Overcome Student Learning Difficulties," *Proceedings of the 6th Annual Conference on Innovation and Technology in Computer Science Education*, Canterbury, UK, 2001, pp. 97–100.
- [Concepcion 99] Concepcion I., Cummins L., Moran E. and Do M., "Algorithma 98: An Algorithm Animation Project," *Proceedings of the 30th SIGCSE Technical Symposium on Computer Science Education*, New Orleans, LO, 1999, pp. 301–305.
- [Cormen 90] Cormen T., Leiserson C. and Rivest R., *Introduction to Algorithms*, MIT Press, Cambridge MA, 1990.
- [Cox 90] Cox K., Wilcox C. and Plun J., "SwarmExec: A Prolog-Based Execution Engine for a Shared-Dataspace Language with Visualization Capabilities," Technical Report WUCS-91-08, Washington University, Saint Louis, MO, December 1990.
- [Crescenzi 00] Crescenzi P., Demetrescu C., Finocchi I. and Petreschi R., "Reversible execution and visualization of programs with Leonardo", *Journal of Visual Languages and Computing*, Vol. 11, No. 2, Academic Press, April 2000, pp. 125–150.
- [Cunniff 87] Cunniff N. and Taylor R., "Graphical vs. textual representation: an empirical study of novices' program comprehension," *Proceedings of the Empirical studies of programmers: second workshop*, Norwood, NJ, Ablex, 1987, pp. 114–131.

- [Cypher 93] Cypher A., editor, *Watch What I Do: Programming by Demonstration*, MIT Press, Cambridge, MA, 1993.
- [Dehornoy 97] Dehornoy, P., "A fast method of comparing braids," *Advances in Mathematics*, Vol. 125, 1997, pp. 200–235.
- [Demetrescu 99] Demetrescu C. and Finocchi I., "A technique for generating graphical abstractions of program data structures," *Proceedings of the 3rd International Conference on Visual Information Systems (Visual'99)*, LNCS 1614, Amsterdam, The Netherlands, June 1999, pp. 785–792.
- [Demetrescu 01] Demetrescu C. and Finocchi I., "Smooth animation of algorithms in a declarative framework," *Journal of Visual Languages and Computing*, Vol. 12, No. 3, Academic Press, 2001.
- [Dershem 02] Dershem H., McFall R. and Uti N., "Animation of Java Linked Lists," *Proceedings of the 33rd SIGCSE Technical Symposium on Computer Science Education*, Cincinnati, KY, 2002, pp. 53–57.
- [DeTreville 93] DeTreville J., "The GraphVBT Interface for Programming Algorithm Animations," *Proceedings of the 1993 IEEE Symposium on Visual Languages*, Bergen, Norway, August 1993, pp. 26–31.
- [Deussen 00] Deussen O. and Strotthotte T., "Computer Generated Pen-and-Ink Illustration of Trees," *SIGGRAPH 2000*, New Orleans, LA, pp. 13-18.
- [Diehl 97] Diehl S., Placzek A. and Kunze Th., "Generierung interaktiver Animationen von abstrakten Maschinen," *Proceedings of Smalltalk und Java in Industrie und Ausbildung STJA'97*, Erfurt, Germany, 1997, pp. 185–190.
- [DiGiano 92a] DiGiano C., "Visualizing Program Behaviour Using Non-speech Audio," M.Sc. Thesis, Dept. of Computer Science, University of Toronto, 1992.
- [DiGiano 92b] DiGiano C. and Baecker R. "Program Auralization: Sound Enhancements to the Programming Environment," *Proceedings Graphics Interface '92*, Vancouver, B.C., May 1992, pp. 44-52.
- [Domingue 98] Domingue, J., "Visualizing Knowledge Based Systems," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, 223–236.
- [Dondis 73] Dondis D., *A Primer of Visual Literacy*, MIT Press, Cambridge, MA. 1973.
- [Douglas 94] Douglas S., McKeown D. and Hundhausen C., "Exploring human visualization of algorithms," Technical Report CIS-TR-94-27, University of Oregon, Eugene, OR, 1994.
- [Douglas 95] Douglas S., Hundhausen C. and McKeown D., "Toward empirically-based software visualization languages," *Proceedings of the 1995 IEEE Symposium on Visual Languages*, Darmstadt, Germany, September 1995, pp. 342–349.
- [Duisberg 86a] Duisberg R., "Animated graphical interfaces using temporal constraints," *Proceedings of the ACM SIGCHI '86 Conference on Human Factors in Computing Systems*, Boston, MA, April 1986, pp. 131–136.
- [Duisberg 86b] Duisberg R., *Constraint-Based Animation: Temporal Constraints in the Animus System.*, PhD thesis, Dept. of Computer Science, University of Washington, Seattle, WA, 1986.
- [Duisberg 87] Duisberg R., "Visual programming of program visualizations. A gestural interface for animating algorithms," *Proceedings of the 1987 IEEE Workshop on Visual Languages*, Linköping, Sweden, August 1987, pp. 55–66.
- [Eisenstadt 85] Eisenstadt M., "Retrospective Zooming: a knowledge based tracing and debugging methodology for logic programming," *Proceedings of the Ninth International Conference on Artificial Intelligence (IJCAI-85)*, Los Angeles, CA, Morgan Kaufmann, 1985.

- [Eisenstadt 88] Eisenstadt, M., Brayshaw, M., "The Truth about Prolog Execution," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1988, pp. 207–221.
- [Esponda 87] „Simulation einer parallelen Prolog-Maschine mit Modula-2“, in *Proceedings 4. Symposium Simulationstechnik*, Informatik-Berichte, Springer-Verlag, Vol. 150, 1987.
- [Esponda 04a] "Algorithmic Animation in Computer Science Education with the Flashdance System", 2. *Workshop Grundlagen Multimedialen Lehrens und Lernens*, Berlin, March 15-18 2004.
- [Esponda 04b] "Chalk Animator – Algorithmic Animation for an Electronic Blackboard", accepted for the *International Conference on Computational Intelligence*, Troy, Turkey, 11-13 February 2004.
- [Esponda 04c] "Learning Algorithms with an Electronic Chalkboard over the Web," submitted to the 3rd International Conference on Web-based Learning, Beijing, China, August 8-11 2004.
- [Faltin 02] Faltin N., „Strukturiertes aktives Lernen von Algorithmen mit interaktiven Visualisierungen,“ unpublished PhD thesis, Computer Science Department, Oldenburg University, 2002.
- [Fleischer 02] Fleischer R. and Kucera L., „Algorithm Animation for Teaching,“ *Software Visualization 2001*, Stephan Diehl, ed., Lecture Notes in Computer Science 2269, Springer-Verlag, Berlin, 2002, pp. 113–128.
- [Foley 86] Foley J. and McMath C., „Dynamic Process Visualization,“ *IEEE Computer Graphics and Applications*, Vol. 6, No. 2, March 1986, pp. 16–25.
- [Francioni 91] Francioni J., Albright L. and Jackson J., "Debugging parallel programs using sound," *SIGPLAN Notices*, Vol. 26, No. 12, December 1991, pp. 68–75.
- [Friedhoff 00] Friedhoff R. M., Peercy M., *Visual Computing*, Scientific American Library, New York, 2000.
- [Friedland 02] Friedland G., Knipping L. and Rojas R., "E-Chalk Technical Description," Technical Report B-02-11, Faculty of Computer Science, Freie Universität Berlin, May 2002.
- [Friedland 03a] Friedland G., Knipping L., Rojas R. and E. Tapia, "Das E-Chalk System: Stand der Entwicklung," Technical Report B-03-03, Department of Mathematics and Computer Science, Freie Universität Berlin, February 2003.
- [Friedland 03b] Friedland G., Knipping L., Tapia E. and R. Rojas, "Web Based Education as a Result of AI Supported Classroom Teaching", *Proceedings of the Seventh Conference on Knowledge-Based Intelligent Information & Engineering Systems (KES)*, Oxford, England, September 3-5, 2003. To appear in: *Lecture Notes in Artificial Intelligence (LNAI) Vol. 2774*, Springer-Verlag, Berlin Heidelberg.
- [Friedland 03c] Friedland G., Knipping L., Rojas R. and C. Zick, "Mapping the Classroom into the Web: Case Studies from several Institutions", *Proceedings of the 12th EDEN Annual Conference*, Rhodos, June 2003.
- [Furnas 86] Furnas G., "Generalized Fisheye Views," *Proceedings of the ACM SIGCHI '86 Conference on Human Factors in Computing Systems*, Boston, MA, April 1986, pp. 16–23.
- [Gardner 70] Gardner M., "The Fantastic Combinations of John Conway's Solitaire Game 'Life'," *Scientific American*, Vol. 223, No. 10, 1970, pp. 120–123.
- [Gaver 91] Gaver W., O'Shea T. and Smith R., "Effective Sounds in Complex Systems: The ARKola Simulation," *Proceedings of the ACM SIGCHI '91 Conference on Human Factors in Computing Systems*, ACM Press, New Orleans, LA, May 1991, pp. 85–90.
- [Gibson 94] Gibson F., Lerch F. and Fichman M., "Examining Animated Algorithms: The Role of Problem Domain Experience and Problem Representation in Rule Development," *Conference Companion on Human Factors in Computer Systems CHI-94*, Boston, MA, 1994, pp. 139–140.

- [Glassman 93] Glassman S., "A turbo environment for producing algorithm animations," *Proceedings of the 1993 IEEE Symposium on Visual Languages*, Bergen, Norway, August 1993, pp. 32–36.
- [Glinert 90] Glinert E. ed., *Visual Programming Environments: Applications and issues*, IEEE Computer Society Press, New York, 1990.
- [Gloor 92] Gloor P., "AAACE - Algorithm Animation for Computer Science Education," *Proceedings of the 1992 IEEE Workshop on Visual Languages*, Seattle, WA, September 1992, pp. 25–31.
- [Gloor 93] Gloor P., Dynes S. and Lee I., *Animated Algorithms*. MIT Press, Cambridge, MA, 1993. (CD-ROM)
- [Eisenstadt 98] Eisenstadt, M., Brayshaw, M., "The Truth about Prolog Execution," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 207–221.
- [Goldstein 47] Goldstein H. and von Neumann J., "Planning and Coding Problems of an Electronic Computing Instrument," *von Neumann, J., Collected Works*, Taub A. ed., Macmillan, 1947, pp. 80–151.
- [Goodrich 98] Goodrich M. and Tamassia R., "Teaching the Analysis of Algorithms with Visual Proofs", *Proceedings of the 29th SIGCSE Technical Symposium on Computer Science Education*, 1998.
- [Green 77] Green T., "Conditional program statements and their comprehensibility to professional programmers," *Journal of Occupational Psychology*, Vol. 50, 1977, pp. 93–109.
- [Green 96] Green T. and Petre M., "Usability analysis of visual programming environments," *Journal of Visual Languages and Computing*, Vol. 7. No. 2, 1996, pp. 131–174.
- [Grissom 03] Grissom S., McNally M. and Naps T., "Algorithm Visualization in CS Education: Comparing Levels of Student Engagement," *Proceedings of the 2003 ACM Symposium on Software Visualization*, San Diego, CA, 2003, pp. 87–94.
- [Gurka 96] Gurka J. and Citrin W., "Testing Effectiveness of Algorithm Animation." *Proceedings of the 1996 IEEE International Symposium on Visual Languages*, Boulder. CO, September 1996, pp. 182–189.
- [Hadamard 49] Hadamard J., *The Psychology of Invention in the Mathematical Field*. Dover Publications, New York, 1949.
- [Haajanen 97] Haajanen J., Pesonius M., Sutinen E., Tarhio J., Teräsvirta T. and Vanninen P., "Animation of user algorithms on the Web," *Proceedings of the IEEE Symposium on Visual Languages*, IEEE Press, 1997, pp. 360–367.
- [Hall 97] Hall V., Bailey J. and Tillman C., "Can Student Generated Illustrations Be Worth Ten Thousand Words?," *Journal of Educational Psychology*, Vol. 89, No. 4, 1997, pp. 677–681.
- [Hansen 98] Hansen S., Schrimpscher, D., Narayanan N. and Hegarty M., "Empirical Studies of Animation-embedded Hypermedia Algorithm Visualizations," Department of CS and Engineering, Auburn University, Technical Report CSE98-06, November 1998.
- [Harel 88] Harel D., "On Visual Formalisms," *Communications of the ACM*. Vol. 31, No. 5, May 1988, pp. 514–530.
- [Hausner 01] Hausner A., "Web Based Animation of Geometric Algorithms", unpublished PhD Thesis, Princeton University, November 2001.
- [Hayes 90] Hayes D., "The XTANGO Environment and Differences from TANGO", XTANGO Documentation, unpublished, 1990.
- [Helttula 89] Helttula E., Hyrskykari A., and Raiha K.A., "Graphical Specification of Algorithm Animations with ALADDIN," *Proceedings of the 22nd Annual Hawaii International Conference on System Sciences*, Kailua-Kona, Hawaii, January 1989, pp. 892–901.

- [Heltulla 90] Heltulla E., Hyrskykari A. and Rähkä K.-J., "Principles of ALADDIN and Other Algorithm Animation Systems," *Visual Languages and Applications*, Ichikawa T., Jungert E. and Korfhage R. eds., Plenum, London, 1990, pp. 175–187.
- [Henry 90] Henry R., Whaley K. and Forstall B., "The University of Washington Illustrating Compiler," *The ACM SIGPLAN'90 Conference on Programming Language Design and Implementation*, ACM, New York, June 1990, pp. 223–233.
- [Hergenhahn 01] Hergenhahn B.R., Olson M., *An Introduction to Learning Theories*, Prentice Hall, NJ, 2001.
- [Hoare 62] Hoare A., "Quicksort," *The Computer Journal*, Vol. 5, No. 1, 1962, pp.10–16.
- [Hopgood 74] Hopgood F., "Computer Animation Used as a Tool in Teaching Computer Science," *Proceedings IFIP Congress*, 1974, pp. 889–892.
- [Hübscher-Younger 03a] Hübscher-Younger T. and Narayanan N., "Constructive and Collaborative Learning of Algorithms," *Proceedings of the 34th SIGCSE Technical Symposium on Computer Science Education*, Reno, NV, 2003, pp. 6–10.
- [Hübscher-Younger 03b] Hübscher-Younger T. and Narayanan N., "Dancing Hamsters and Marble Statues: Characterizing Student Visualizations of Algorithms," *Proceedings of the 2003 ACM Symposium on Software Visualization*, San Diego, CA, 2003, pp. 95–104.
- [Hundhausen 00] Hundhausen C., Douglas S., "Shifting From "High Fidelity" to "Low Fidelity" Algorithm Visualization Technology," *SIGCHI 2000 Extended Abstracts: Conference on Human Factors in Computing Systems*, ACM Press, New York, pp. 179–180.
- [Hundhausen 01] Hundhausen C., Douglas S., "A Language and System for Constructing and Presenting Low Fidelity Algorithm Visualizations", *Proceedings of Software Visualization 2001*, Dagstuhl, Germany, May 20–25, 2001, pp. 227–240.
- [Hundhausen 02a] Hundhausen C., "The "Algorithms Studio" Project: Using sketch-based visualization technology to construct and discuss visual representations of algorithms," *Proceedings IEEE 2002 Symposia on Human Centric Computing Languages and Environments*, IEEE Computer Society Press, Los Alamitos, CA, 2002, pp. 99–100.
- [Hundhausen 02b] Hundhausen C., Douglas S. and Stasko J., "A Meta-Study of Algorithm Visualization Effectiveness," *Journal of Visual Languages and Computing*, Vol. 13, pp. 259–290.
- [Jackson 96] Jackson D. and Morton I., "Algorithm Animation of Neural Networks," *Proceedings of the 1st Conference on Integrating Technology Into Computer Science Education*, Barcelona, Spain, 1996, pp. 39–41.
- [Jackson 97] Jackson D. and Fovargue A., "The Use of Animations to Explain Genetic Algorithms," *Proceedings of the 28th SIGCSE Technical Symposium on Computer Science Education*, San Jose, CA, pp. 243–247.
- [Jeffery 94] Jeffery C. and Griswold R., "A Framework for Monitoring Program Execution in Icon," *Software, Practice & Experience*, Vol. 11, No. 4, November 1994, pp. 1025–1049.
- [Jeffery 98] Jeffery C., "A Menagerie of Program Visualization Techniques," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 73–79.
- [Jerding 95] Jerding D. and Stasko J., "The Information Mural: A Technique for Displaying and Navigating Large Information Spaces," *Proceedings of the IEEE Information Visualization Conference*, Atlanta, GA, October 1995, pp. 43–50.
- [Johnson 91] Johnson B. and Shneiderman B., "Tree-Maps: A Space-Filling Approach to the Visualization of Hierarchical Information Structures," *Proceedings of the 2nd International IEEE Visualization Conference*, San Diego, CA, October 1991, pp 284–1-91.

- [Kehoe 01] Kehoe C., Stasko J. and Taylor A., "Rethinking the Evaluation of Algorithm Animations as Learning Aids: An Observational Study," *International Journal of Human-Computer Studies*, Vol. 54, No. 2, February 2001, pp. 265–284.
- [Kimelman 98] Kimelman, D., Rosenburg, B., Roth, T., "Visualization of Dynamics in Real World Software Systems," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 293–314.
- [Knowlton 66a] Knowlton K., "A Programmer's Description of L6, Bell Telephone Laboratories' Low-Level Linked List Language", *Communications of the ACM*, Vol. 9, N. 8, August 1966, pp. 616–625.
- [Knowlton 66b] Knowlton K., *L6: Bell Telephone Laboratories Low-Level Linked List Language*, 16-minute black-and-white film, Murray Hill, NJ, 1966.
- [Knowlton 66c] Knowlton K., *L6: Part 11. An Example of L6 Programming*, 30-minute black-and-white film, Murray Hill, NJ, 1966
- [Knuth 73] Knuth D., *The Art of Computer Programming, Volume 3: Searching and Sorting*, Addison-Wesley, Reading, MA, 1973.
- [Knuth 84] Knuth D., "Literate Programming," *The Computer Journal*, Vol. 27, No. 2, 1984, pp. 97–111.
- [Korte 02] Korte A., "Computer Aided Inbetweening," *Proceedings of the Second International Symposium on Non-photorealistic Animation and Rendering*, Annecy, France, 2002, pp. 125–132.
- [Kortenkamp 99] Kortenkamp U. and Richter-Gebert J., *The Interactive Geometry Software Cinderella*, Springer-Verlag, Berlin, CD-ROM, 1999.
- [Kosslyn 78] Kosslyn S., "Imagery and internal representation," *Cognition and Categorization*., Rosch E. and Lloyd B. eds., Lawrence Erlbaum, 1978, pp. 227–286
- [Kraemer 93] Kraemer E. and Stasko J., "The Visualization of Parallel Systems: An Overview," *Journal of Parallel and Distributed Computing*, Vol. 18, No. 2, June 1993, pp. 105–117.
- [Kraemer 94] Kraemer E. and Stasko J., "Toward flexible control of the temporal mapping from concurrent program events to animations," *Proceedings of the Eighth International Parallel Processing Symposium*, Cancun, Mexico, April 1994, pp. 902–908.
- [Lamping 94] Lamping, J. and Rao R., "Laying out and Visualizing Large Trees Using a Hyperbolic Space," *Proceedings of UIST '94*, Monterey, CA, November 1994, pp. 13–14.
- [Larkin 87] Larkin L and Simon H., "Why a diagram is (sometimes) worth 10,000 words," *Cognitive Science*, Vol. 11, No. 1, 1987, pp. 65–99.
- [Lasseter 87] Lasseter J., "Principles of Traditional Animation Applied to 3D Computer Animation" *Computer Graphics*, Vol. 21, No. 4, July 1987 (SIGGRAPH 87), pp. 35–44.
- [Lawrence 93] Lawrence A., "Empirical Studies of the Value of Algorithm Animation in Algorithm Understanding," unpublished PhD thesis, Georgia Institute of Technology. Atlanta, GA, 1993.
- [Lawrence 94] Lawrence A., Badre A. and Stasko J., "Empirically evaluating the use of animations to teach algorithms," *Proceedings of the 1994 IEEE Symposium on Visual Languages*, St. Louis, MO, October 1994, pp. 48–54.
- [LeBlanc 90] LeBlanc T., Mellor-Crummey J. and Fowler R., "Analyzing parallel program execution using multiple views," *Journal of Parallel and Distributed Computing*, Vol. 9, No. 2, June 1990, pp. 203–217.
- [Lieberman 84b] Lieberman H., "Seeing What Your Programs Are Doing," *International Journal of Man-Machine Studies*, Vol. 21, No. 4, October 1984, pp. 311–331.
- [Lieberman 87] Lieberman H., "Reversible Object-Oriented Interpreters," *First European Conference on Object-Oriented Programming*, Springer-Verlag, Paris., France, 1987.

- [Lieberman 89] Lieberman H., "A Three-Dimensional Representation for Program Execution." *Proceedings of the 1989 IEEE Workshop on Visual Languages*, Rome, Italy, October 1989, pp. 111–116.
- [Lieberman 98] Lieberman, H., Fry, C., "ZStep 95: A Reversible, Animated Source Code Stepper," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 277–292.
- + [London 85] London R. and Duisberg R., "Animating Programs Using Smalltalk," *Computer*, Vol. 18, No. 8, August 1985, pp. 61–71.
- [Lohse 94] Lohse G., Biolski K., Walker N., Rueter H., „A Classification of Visual Representations," *Communications of the ACM*, Vol. 12, No. 12, 1994, pp. 36–49.
- [Mackinlay 86] Mackinlay J., "Automating the Design of Graphical Presentations of Relational Information," *ACM TOGS*, Vol. 5, No. 2, April 1986, pp. 110– 141.
- [Marcus 95] Marcus A., "Principles of Effective Visual Communication for Graphical User Interface Design," *Readings in Human Computer Interaction: Toward the Year 2000*, Baecker R., Grudin J., Buxton W. and Greenberg S. eds., Morgan Kaufmann, 1995, pp. 425–441.
- [Martin 85] Martin J. and McClure C., *Diagramming Techniques for Analysts and Programmers*, Prentice-Hall, 1985.
- [Mayer 90] Mayer R. and Gallini J., "When is an Illustration Worth Ten Thousand Words?," *Journal of Educational Psychology*, Vol. 82, No. 4, 1990, pp. 715–726.
- [Mayer 91] Mayer R. and Anderson R., "Animations Need Narrations: An Experimental Test of a Dual-Coding Hypothesis," *Journal of Educational Psychology*, Vol. 83, No. 4, 1991, pp. 484–490.
- [Mayer 92] Mayer R. and Anderson R., "The Instructive Animation: Helping Students Build Connections between Words and Pictures in Multimedia Learning." *Journal of Educational Psychology*, Vol. 84, No. 4. 1992, pp. 444–452.
- [McWirther 96] McWirther J., "Algorithm Explorer: A Student Centered Animation System," *Proceedings of the IEEE 1996 Symposium on Visual Languages*, pp. 174–181.
- [Moher 88] Moher T., "A Process Visualization and Debugging Environment," *IEEE Transactions on Software Engineering*, Vol. 14, No. 6, June 1988, pp. 849–857.
- [Moore 93] Moore P. and Fitz C., "Gestalt theory and instructional design," *Journal of Technical Writing and Communication*, Vol. 23, No. 2, pp. 137–157.
- [Moreno 02] Moreno R. and Mayer R., "Verbal Redundancy in Multimedia Learning: When Reading Helps Listening," *Journal of Educational Psychology*, Vol. 94, No. 1, 2002, pp. 156–163.
- [Müller 03] Müller R., *ActionScript für Programmierer*, dpunkt.verlag, Heidelberg, 2003.
- [Mukherjea 94] Mukherjea S. and Stasko J., "Toward Visual Debugging: Integrating Algorithm Animation Capabilities within a Source Level Debugger," *ACM Transactions on Computer-Human Interaction*, Vol. 1, No. 3, September 1994, pp. 215–244.
- [Mulholland 95] Mulholland, P. "A Framework for Describing and Evaluating Software Visualization Systems: A Case-Study in Prolog," Ph.D. Thesis, The Knowledge Media Institute. The Open University, 1995.
- [Myers 83] Myers B., "Incense: A System for Displaying Data Structures," *Proceedings of ACM SIGGK-LPH '83*, July 1983, pp. 115–125.
- [Myers 86] Myers B., "Visual Programming, Programming by Example, and Program Visualization: A Taxonomy," *Proceedings of the ACM SIGCHI '86 Conference on Human Factors in Computing Systems*, Boston, MA, April 1986, pp. 59–66.
- [Myers 88] Myers B., "The State of the Art in Visual Programming and Program Visualization," Computer Science Dept., Carnegie-Mellon University, Pittsburgh, PA. Technical Report CMU-CS-88-114, 1988.

- [Myers 90] Myers B., Taxonomies of Visual Programming and Program Visualization. *Journal of Visual Languages and Computing*, Vol. 1, No. 1. March 1990. pp. 97-123.
- [Myers 92] Myers B., "Demonstrational Interfaces: A Step Beyond Direct Manipulation," *Computer*, Vol. 25, No. 8, August 1992, pp. 61-73.
- [Najork 94] Najork M., "Obliq-3D tutorial and reference manual," SRC Research Report 129, December 1994.
- [Najork 01] Najork M., "Web-based Algorithm Animation," *Proceedings of the 38th Conference on Design Automation*, Las Vegas, NV, 2001, pp. 506-511.
- [Naps 94] Naps T., "An Object-Oriented Approach to Program Visualization – Easy, Extensible, and Dynamic," *Proceedings of the 25th SIGCSE symposium on Computer Science Education*, Phoenix, AK, pp. 46-50.
- [Naps 00] Naps T., "JHAVÉ—An Environment to Actively Engage Students in Web-based Algorithm Visualizations," *Proceedings of the 31st SIGCSE Technical Symposium on Computer Science Education*, Austin, TX, 2000, pp. 109-113.
- [Naps 97] Naps T., "Algorithm Visualization in the World Wide Web – The Difference Java Makes", *Proceedings of the 2nd Conference on Integrating Technology into Computer Science Education*, Uppsala, Sweden, 1997, pp. 59-61.
- [Nelsen 97] Nelsen R., *Proofs without Words : Exercises in Visual Thinking*, Washington DC: The Mathematical Association of America, August 1997.
- [Nielsen 90] Nielsen G., Shriver B. and Rosenblum J., *Visualization in Scientific Computing*, IEEE Computer Society Press, Washington, 1990.
- North, S., "Visualizing Graph Models of Software," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1988 pp. 63-72.
- [Oman 90] Oman P. and Cook C., "Typographic Style is More than Cosmetic," *Communications of the ACM*, Vol. 33. No. 5. Nov 1990, pp. 506-520.
- [Paivio 90] Paivio A., *Mental Representations: A Dual Coding Approach*, New York: Oxford University Press, 1990.
- [Papert 80] Papert S., *Mindstorms: Children, Computers and Powerful Ideas*, Harvester, Brighton, UK, 1980.
- [Petre 91] Petre M., "What Experts Want From Programming Languages," *Ergonomics* (Special Issue on Cognitive Ergonomics), Vol. 34, No. 8, 1991, pp. 1113-1127.
- [Petre 93] Petre M. and Green T., "Learning to Read Graphics: Some Evidence That "seeing" an Information Display is an Acquired Skill," *Journal of Visual Languages and Computing*. Vol. 4, No. 1. 1993. pp. 55-70.
- [Petre 95] Petre M., "Why Looking Isn't Always Seeing: Readership Skills and Graphical Programming," *Communications of the ACM*, Vol. 38, No. 6. June 1995, pp. 33-44.
- [Petre 98] Petre, M., Blackwell, A., Green, T., "Cognitive Questions in Software Visualization," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 453-480.
- [Pierson 98] Pierson W. and Rodger S. H., "Web-based Animation of Data Structures Using JAWAA," *Twenty-ninth SIGCSE Technical Symposium on Computer Science Education*, Atlanta, GA, 1998, p. 267-271.
- [Price 90] Price B., "A Framework for the Automatic Animation of Concurrent Programs," M.Sc. Thesis, Dept. of Computer Science, University of Toronto, Canada, 1990.
- [Price 93] Price B., Baecker R. and Small I., "A Principled Taxonomy of Software Visualization," *Journal of Visual Languages and Computing*, Vol. 4, No. 3, 1993, pp. 211-266.

- [Price 98] Price, B., Baecker, R. and Small, I., "An Introduction to Software Visualization," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 3–27.
- [Rasala 99] Rasala R., "Automatic Array Algorithm Animation in C++," *Proceedings of the 30th SIGCSE Technical Symposium on Computer Science Education*, New Orleans, LO, 1999, pp. 257–260.
- [Rautama 97] Rautama E., Sutinen E. and Tarhio J., "Excel as an algorithm animation environment," *Proceedings of the 2nd Conference on Integrating Technology into Computer Science Education*, Uppsala, Sweden, 1997, pp. 24–26.
- [Reiss 98] Reiss, S., "Visualization for Software Engineering – Programming Environments," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 259–276.
- [Rhyne 00] Rhyne T-M., "Computer Games' Influence on Scientific and Information Visualization," *IEEE Computer*, December 2000, pp. 154–156.
- [Rieber 89] Rieber L., "A Review of Animation Research in Computer-Based Instruction," *Proceedings of the 1989 Annual Convention of the Association for Educational Communications and Technology*. No. 11, 1989. pp. 369–390.
- [Rieber 90a] Rieber L., "Using Computer Animated Graphics in Science Instruction With Children," *Journal of Educational Psychology*, Vol. 82, No. 1, 1990. pp. 135–140.
- [Rieber 90b] Rieber L., "Effects of Animated Graphics on Student Learning." *Journal of Educational Psychology*, Vol. 82, No. 1, 1990. pp. 123–321.
- [Rigney 76] Rigney L and Lutz K., "Effect of Graphic Analogies of Concepts in Chemistry on Learning and Attitude," *Journal of Educational Psychology*, Vol. 68, No. 3, 1976. pp. 305–311.
- [Robertson 93] Robertson G., Card S. and Mackinlay J., "Information Visualization Using 3D Interactive Animation," *Communications of the ACM*, Vol. 36, No. 4, April 1993, pp. 56–71.
- [Rößling 00] Rößling G. and Freisleben B., "Experiences in Using Animations in Introductory Computer Science Lectures," *Proceedings of the 31st SIGCSE Technical Symposium on Computer Science Education*, Austin, TX, 2000, pp.134–138.
- [Rößling 01] Rößling G. and Freisleben B., "AnimalScript: An Extensible Scripting Language for Algorithm Animation," *Proceedings of the 32nd SIGCSE Technical Symposium on Computer Science Education*, Charlotte, NC, 2001, pp.70–74.
- [Rojas 01] Rojas R., Knipping L., Raffel U. and Friedland G, "Elektronische Kreide: Eine Java-Multimedia-Tafel für den Präsenz und Fernunterricht", *Informatik: Forschung und Entwicklun*, Vol. 16, No. 3, pp. 159–168.
- [Roman 89] Roman G.-C. and Cox K., "A Declarative Approach to Visualizing Concurrent Computations," *Computer*, Vol. 22, No. 10, October 1989, pp. 25–36.
- [Roman 92] Roman G.-C., Cox K., Wilcox C. and Plun J., "Pavane: A System for Declarative Visualization of Concurrent Computations," *Journal of Visual Languages and Computing*, Vol. 3. No. 1, January 1992, pp. 161–193.
- [Roman 93] Roman G.-C. and Cox K., "A Taxonomy of Program Visualization Systems," *Computer*, Vol. 26, No. 12, December 1993, pp. 11–24.
- [Roman 98] Roman, G.-C., "Declarative Visualization," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1988, pp. 173–186.
- [Sarkar 92] Sarkar M. and Brown M., "Graphical Fisheye Views of Graphs," *Proceedings of the ACM SIGCHI '92 Conference on Human Factors in Computing Systems*. ACM, Monterey, CA, 1992, pp. 83–91.

- [Scaife 96] Scaife M. and Rogers Y. "External Cognition: how do Graphical Representations Work?" *International Journal of Human Computer Studies*. Vol. 45, No. 2, August 1996, pp. 185–213.
- [Scanlan 99] Scanlan D., "Structured Flowcharts Outperform Pseudocode: An Experimental Comparison," *IEEE Software*, Vol. 6, No. 5. 1989e pp. 28–36.
- [Sedgewick 03] Sedgewick R., *Bundle of Algorithms in Java: Fundamentals, Data Structures, Sorting, Searching, and Graph Algorithms*, Third Edition, Addison-Wesley, Reading, MA, 2003.
- [Selig 90] Selig W. and Johannes J., "Reasoning Visualization in Expert Systems: The Applicability of Algorithm Animation Techniques," *Proceedings of the Third International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems*, Vol. 1, Charleston, SC, pp. 457–466.
- [Shah 95] Shah P. and Mayer R., "Graphs as Aids to Knowledge Construction: Signaling Techniques for Guiding the Process of Graph Comprehension," *Journal of Educational Psychology*, Vol. 91, No. 4. 1999, pp. 690–702.
- [Shimomura 91] Shimomura T. and Isoda S., "Linked-list Visualization for Debugging," *IEEE Software*, Vol. 8, No. 3, May 1991, pp. 44–51.
- [Stasko 89] Stasko J., "TANGO: A Framework and System for Algorithm Animation," PhD thesis, Brown University. Providence, RI, May 1989. Available as Technical Report No. CS-89-30.
- [Stasko 90a] Stasko J., "The Path-Transition Paradigm: A Practical Methodology for Adding Animation To Program Interfaces," *Journal of Visual Languages and Computing*, Vol. 1. No. 3, September 1990, pp. 213–236.
- [Stasko 90b] Stasko J., "TANGO: A Framework and System for Algorithm Animation," *IEEE Computer*, Vol. 23, No. 9, September 1990, pp. 27–39.
- [Stasko 91a] Stasko J., "Using Direct Manipulation to Build Algorithm Animations by Demonstration," *Proceedings of the ACM SIGCHI '91 Conference on Human Factors in Computing Systems*. New Orleans, LA, May 1991. pp. 307–314,
- [Stasko 92a] Stasko J., "Animating Algorithms with XTANGO," *SIGACT News*, Vol. 23, No. 2, Spring 1992. pp. 67– 71.
- [Stasko 92c] Stasko J. and Patterson C., "Understanding and Characterizing Software Visualization Systems." *Proceedings of the 1992 IEEE Workshop on Visual Languages*, Seattle, WA. September 1992, pp. 3–10.
- [Stasko 92d] Stasko J. and Hayes D., "XTANGO Algorithm Animation Designer's Package," College of Computing, Georgia Institute of Technology, October 21, 1992.
- [Stasko 93a] Stasko J., Badre A. and Lewis C., "Do Algorithm Animations Assist Learning? An Empirical Study and Analysis," *Proceedings of the INTERCHI '93 Conference on Human Factors in Computing Systems*, Amsterdam, Netherlands, April 1993, pp. 61–66.
- [Stasko 93b] Stasko J. and Kraemer E., "A Methodology for Building Application Specific Visualizations of Parallel Programs," *Journal of Parallel and Distributed Computing*, Vol. 18, No. 2. June 1993, pp. 258–264.
- [Stasko 93c] Stasko J. and Wehrli J., "Three-dimensional Computation Visualization," *Proceedings of the 1993 IEEE Symposium on Visual Languages*, Bergen, Norway, August 1993, pp. 100–107.
- [Stasko 95] Stasko J. and McCrickard D., "Real Clock Time Animation Support for Developing Software Visualizations," *Australian Computer Journal*, Vol. 27, No. 3, pp. 118–128.
- [Stasko 97] Stasko J., "Using Student-Built Algorithm Animations as Learning Aids," *Proceedings of the 1997 ACM SIGCSE Conference*, San Jose, CA, February 1997, pp. 25–29.

- [Stasko 98a] Stasko, J., "Smooth Continuous Animation for Portraying Algorithms and Processes," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1998, pp. 103–118.
- [Stasko 98b] Stasko, J., "Building Software Visualizations through Direct Manipulation and Demonstration," *Software Visualization – Programming as a Multimedia Experience*, Stasko J., Domingue J., Brown M., Price B., eds., Cambridge, MA, MIT Press, 1988, pp. 187–203.
- [Stenning 95a] Stenning K. and Oberlander J. "A Cognitive Theory of Graphical and Linguistic Reasoning: Logic and Implementation," *Cognitive Science*, Vol. 19, No. 1, 1995, pp. 97–140.
- [Stern 97] Stern L. and Sterling L., „Teaching AI Using Animations Reinforced by Interactive Exercises,” *Proceedings of the Second Australasian Conference on Computer Science Education*, University of Melbourne, Australia, 1997, pp. 78–83.
- [Strothotte 97] Strothotte C., and Strothotte T., *Seeing Between the Pixels – Pictures in Interactive Systems*, Springer-Verlag, Berlin, 1997.
- [Strothotte 98] Strothotte T., *Computational Visualization – Graphics, Abstraction, and Interactivity*, Springer-Verlag, Berlin, 1998.
- [Sugiyama 81] Sugiyama K., Tagawa S. and Toda M., "Methods for Visual Understanding of Hierarchical Systems," *IEEE TSMC*, Vol. 11, No. 2, 1981, pp. 109–125.
- [Takahashi 94] Takahashi S., Miyashita K., Matsuoka S. and Yonezawa A., "A Framework for Constructing Animations via Declarative Mapping Rules," *Proceedings of the 1994 IEEE Symposium on Visual Languages*, St. Louis, MO. October 1994, pp. 314–322.
- [Tal 95] Tal A. and Dobkin D., "Visualization of Geometric Algorithms," *IEEE Transactions on Visualization and Computer Graphics*, Vol. 1, No. 2, June 1995, pp. 194–204.
- [Tapia 02] Tapia E. and Rojas R., "Recognition of Handwritten Digits in the E-Chalk System using Support Vector Machines," Technical Report B02-14, Department of Mathematics and Computer Science, Freie Universität Berlin, Oktober 2002.
- [Tapia 03a] Tapia E. and Rojas R., "Recognition of On-Line Handwritten Mathematical Expressions using a Minimum Spanning Tree Construction and Symbol Dominance," *Proceedings of the Fifth IAPR International Workshop on Graphics Recognition (GREC)*, Barcelona, Spain, July 30-31, 2003. To appear in *Lecture Notes in Computer Science*, Special Issue on Graphics Recognition, Springer-Verlag, 2003.
- [Tapia 03b] Tapia E. and Rojas R., "Recognition of On-line Handwritten Mathematical Formulas in the E-Chalk System," *Proceedings of the Seventh International Conference on Document Analysis and Recognition (ICDAR)*, Edinburgh, Scotland, August 3-6, 2003.
- [Theeuwes 98] Theeuwes J., Kramer A., Hahn S. and Irwin D., „Our Eyes Do Not Always Go Where We want Them To Go: Capture of the Eyes by New Objects," *Psychological Science*, Vol. 9, No. 5, pp. 379, 1998.
- [Thomas 01] Thomas B. and Calder P., "Applying Cartoon Animation Techniques to Graphical User Interfaces," *ACM Transactions on Computer-Human Interaction*, Vol. 8, No. 3, September 2001, pp. 198–222.
- [Tufte 83] Tufte E., *The Visual Display of Quantitative Information*, Graphics Press, Cheshire, CT, 1983.
- [Tufte 90] Tufte E., *Envisioning Information*, Graphics Press, Cheshire CT, 1990.
- [Tversky 91] Tversky B., Kugelmass S. and Winter A., "Cross-Cultural and Developmental Trends in Graphic Productions," *Cognitive Psychology*, Vol. 23, No. 4, 1991, pp. 515–557.
- [Tversky 95] Tversky B., "Cognitive Origins of Graphic Productions," Marchese F., editor, *Understanding Images – Finding Meaning in Digital Imagery*, Springer-Verlag, New York, 1995, pp. 29–53.

[Velez-Sosa 93] Velez-Sosa A. and Gloor P., "Animating Hashing Algorithms for Computer Science Education," *Proceedings of the 1993 ACM Conference on Computer Science*, Indianapolis, IN, pp. 201–208.

[Wertheimer 23] Wertheimer M., "Untersuchungen zur Lehre von der Gestalt II," *Psychologische Forschung Vol.4*, 1923, pp. 301–350.

[Williams 64] Williams J.W., "Heapsort," *Communications of the ACM*, Vol. 7, 1964, pp. 347–348.

[Yarwood 74] Yarwood E., "Toward Program Illustration," M.Sc. Thesis, Department of Computer Science, University of Toronto, 1974.

[Zelkowitz 73] Zelkowitz M., "Reversible Execution." *Communications of the ACM*, Vol. 16, No. 9, September 1973, p. 566.