Bibliography

[1] J. Abello, F. van Ham, and N. Krishnan. ASK-GraphView: A large scale graph visualization system. *IEEE Transactions on Visualization and Computer Graphics*, 12(5):669–676, 2006.

[2] C Ahlberg, C Williamson, and B Shneiderman. Dynamic queries for information exploration: an implementation and evaluation. In *CHI '92: Proceedings of the SIGCHI conference on human factors in computing systems*, pages 619–626. ACM Press, 1992.

[3] W. Aigner, S. Miksch, W. Müller, H. Schumann, and C. Tominski. Visual methods for analyzing time-oriented data. *IEEE Transactions on Visualization and Computer Graphics*, 14(1):47–60, 2008.

[4] R. Amar, J. Eagan, and J. Stasko. Low-level components of analytic activity in information visualization. In *IEEE Symposium on Information Visualization, 2005. INFOVIS 2005*, pages 111–117, 2005.

[5] G. Andrienko, N. Andrienko, P. Jankowski, D. A. Keim, M. J. Kraak, A. MacEachren, and S. Wrobel. Geovisual analytics for spatial decision support: Setting the research agenda. *International Journal of Geographical Information Science*, 21(8):839–858, 2007.

[6] G. Andrienko, N. Andrienko, S. Rinzivillo, M. Nanni, D. Pedreschi, and F. Giannotti. Interactive visual clustering of large collections of trajectories. In *IEEE Symposium on Visual Analytics Science and Technology*, pages 3–10, 2009.

[7] N. Andrienko and G. Andrienko. *Exploratory Analysis of Spatial and Temporal Data: a Systematic Approach*. Springer, 2006.

[8] L. Anselin. What is special about spatial data? alternative perspectives on spatial data analysis. Technical Report 89-4, National Center for Geographic Information and Analysis, 1989.

[9] A. Aris and B. Schneiderman. A node aggregation strategy to reduce complexity of network visualization using semantic substrates. Technical Report HCIL-2008-10, Human-Computer Interaction Lab, University of Maryland, 2008.

[10] P. Bak, I. Omer, and T. Schreck. Visual analytics of urban environments using high-resolution geographic data. In M. Painho, M.Y. Santos, and H. Pundt, editors, *Geospatial Thinking, Lecture Notes in Geoinformation and Cartography*. Springer, 2010.

[11] D. Barbará, W. DuMouchel, C. Faloutsos, P. J. Haas, J. M. Hellerstein, Y. E. Ioannidis, H. V. Jagadish, T. Johnson, R. T. Ng, V. Poosala, K. A. Ross, and K. C. Sevcik. The New Jersey data reduction report. *IEEE Data Eng. Bull.*, 20(4):3–45, 1997.

[12] J. C. Barrett, B. Fry, J. Maller, and M. J. Daly. Haploview: analysis and visualization of LD and haplotype maps. *Bioinformatics*, 21(2):263–265, 2005.

[13] BELIV. Beyond Time and Errors: Novel Evaluation Methods for Information Visualization, ACM Press.

[14] E. Bertini and D. Lalanne. Investigating and reflecting on the integration of automatic data analysis and visualization in knowledge discovery. *SIGKDD Explorations*, 11(2):9–18, May 2010.

[15] E. Bertini and G. Santucci. Is it darker? improving density representation in 2D scatter plots through a user study. In *Conference on Visualization and Data Analysis*, volume 5669, pages 158–167, 2005.

[16] E. Bertini and G. Santucci. Give chance a chance: modeling density to enhance scatter plot quality through random data sampling. *Information Visualization*, 5(2):95–110, 2006.

[17] E. Bertini and G. Santucci. Visual quality metrics. In *BELIV '06: Proceedings of the 2006 AVI workshop on beyond time and errors*, pages 1–5. ACM, 2006.

[18] P. A. Boncz, M. L. Kersten, and S. Manegold. Breaking the memory wall in MonetDB. *Commun. ACM*, 51(12):77–85, 2008.

[19] J. Boulos, N. Dalvi, B. Mandhani, S. Mathur, C. Re, and D. Suciu. MYSTIQ: a system for finding more answers by using probabilities. In *SIGMOD '05: Proceedings of the 2005 ACM SIGMOD international conference on Management of data*, pages 891–893. ACM, 2005.

[20] P. Buono, A. Aris, C. Plaisant, A. Khella, and B. Shneiderman. Interactive pattern search in time series. In *Proceedings of SPIE*, volume 5669, pages 175–186, 2005.

[21] C. M. Burns and J. R. Hajdukiewicz. *Ecological interface design*. CRC, 2004.

[22] T. Butkiewicz, W. Dou, Z. Wartell, W. Ribarsky, and R. Chang. Multi-focused geospatial analysis using probes. *IEEE Transactions on Visualization and Computer Graphics*, 14:1165–1172, 2008.

[23] D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, and R. Rosati. Conceptual modeling for data integration. In *Conceptual Modeling: Foundations and Applications*, pages 173–197, 2009.

[24] S. K. Card and J. Mackinlay. The structure of the information visualization design space. In *Proceedings of the IEEE Symposium on Information Visualization (InfoVis '97)*, pages 92–99, 1997.

[25] S. K. Card, J. D. Mackinlay, and B. Shneiderman. *Readings in information visualization: using vision to think*. Morgan Kaufmann, 1999.

[26] S. Carpendale. Evaluating information visualization. In A. Kerren, J. Stasko, J. Fekete, and C. North, editors, *Information Visualization: Human-Centered Issues and Perspectives*, pages 19–45. Springer, 2008.

[27] C. Chen. *Information Visualization - Beyond the Horizon*. Springer, 2004.

[28] C. Chen and Y. Yu. Empirical studies of information visualization: a meta-analysis. *Int. J. Hum.-Comput. Stud.*, 53(5):851–866, 2000.

[29] E. H. Chi and J. Riedl. An operator interaction framework for visualization systems. In *INFOVIS '98: Proceedings of the 1998 IEEE Symposium on Information Visualization*, pages 63–70, 1998.

[30] L. Chittaro, C. Combi, and G. Trapasso. Data mining on temporal data: a visual approach and its clinical application to hemodialysis. *Journal of Visual Languages & Computing*, 14(6):591–620, 2003.

[31] E. F. Codd, S. B. Codd, and C. T. Salley. Providing OLAP (On-Line Analytical Processing) to user-analysis: An IT mandate, 1993.

[32] L. Colgan, R. Spence, and P. Rankin. The cockpit metaphor. *Behaviour & Information Technology*, 14(4):251–263, 1995.

[33] V. Coltheart. *Fleeting memories: Cognition of brief visual stimuli*. MIT Press, 1999.

[34] O. De Bruijn and R. Spence. A new framework for theory-based interaction design applied to serendipitous information retrieval. *ACM Trans. Comput.-Hum. Interact.*, 15(1):1–38, 2008.

[35] M. C. Ferreira de Oliveira and H. Levkowitz. From visual data exploration to visual data mining: A survey. *IEEE Transactions on Visualization and Computer Graphics*, 9(3):378–394, 2003.

[36] A. Dix, J. Finlay, and G. D. Abowd. *Human-computer interaction*. Prentice Hall, 3rd edition, 2004.

[37] S. R. dos Santos and K. W. Brodlie. Gaining understanding of multivariate and multidimensional data through visualization. *Computers & Graphics*, 23(1):311–325, June 2004.

[38] J. Dykes, A. M. MacEachren, and M-J. Kraak, editors. *Exploring Geovisualization*. Elsevier, 2005.

[39] S. G. Eick. Visualizing multi-dimensional data. *SIGGRAPH Comput. Graph.*, 34(1):61–67, 2000.

[40] S. G. Eick, J. Mauger, and A. Ratner. Visualizing the performance of computational linguistics algorithms. In *2006 IEEE Symposium On Visual Analytics Science And Technology*, pages 151–157, 2006.

[41] G. Ellis and A. Dix. A taxonomy of clutter reduction for information visualisation. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1216–1223, 2007.

[42] G. Ellis, J. Finlay, and A. Pollitt. HIBROWSE for hotels: bridging the gap between user and system views of a database. In *IDS'94 Workshop on User Interfaces to Databases*, pages 45–58. Springer, 1994.

[43] A. K. Elmagarmid, P. G. Ipeirotis, and V. S. Verykios. Duplicate record detection: A survey. *IEEE Transactions on Knowledge and Data Engineering*, 19(1):1–16, January 2007.

[44] R. Elmasri and S. B. Navathe. *Fundamentals of Database Systems*. Addison-Wesley, 2007.

[45] W. Fikkert, M. D'Ambros, T. Bierz, and T. Jankun-Kelly. Interacting with visualizations. *Human-Centered Visualization Environments*, pages 77–162, 2007.

[46] B. R. Gaines. Modeling and forecasting the information sciences. *Inf. Sci.*, 57-58:3–22, 1991.

[47] F. Giannotti and D. Pedreschi. *Mobility, Data Mining and Privacy: Geographic Knowledge Discovery*. Springer, 2008.

[48] J. Gibson. *The Ecological Approach to Visual Perception*. Lawrence Erlbaum Associates, 2nd (reprint) edition, 1986.

[49] E. W. Gilbert. Pioneer maps of health and disease in England. *Geographical Journal*, 124(2):172–183, 1958.

[50] G. Grinstein, C. Plaisant, S. Laskowski, T. O'Connell, J. Scholtz, and M. Whiting. VAST 2008 challenge: Introducing mini-challenges. In *IEEE Symposium on Visual Analytics Science and Technology (VAST '08)*, pages 195–196, 2008.

[51] D. Guo, J. Chen, A. M. MacEachren, and K. Liao. A visualization system for space-time and multivariate patterns (vis-stamp). *IEEE transactions on visualization and computer graphics*, pages 1461–1474, 2006.

[52] R. B. Haber and D. A. McNabb. Visualization idioms: A conceptual model for scientific visualization systems. In B. Shriver, G. M. Nielson, and L. J. Rosenblum, editors, *Visualization in Scientific Computing*, pages 74–93. IEEE, 1990.

[53] T. Hägerstrand. What about people in regional science? *Papers of the Regional Science Association*, 24:7–21, 1970.

[54] J. Han and M. Kamber. *Data mining: concepts and techniques*. Morgan Kaufmann, 2006.

[55] D. J. Hand, H. Mannila, and P. Smyth. *Principles of Data Mining*. The MIT Press, 2001.

[56] C. D. Hansen and C. R. Johnson. *The visualization handbook*. Academic Press, 2005.

[57] J. Heer, S. K. Card, and J. A. Landay. Prefuse: a toolkit for interactive information visualization. In *Proceedings of the SIGCHI conference on human factors in computing systems*, pages 421–430. ACM, 2005.

[58] J. Hollan, E. Hutchins, and D. Kirsh. Distributed cognition: Toward a new foundation for human-computer interaction research. *ACM Trans. Comput.-Hum. Interact.*, 7(2):174–196, 2000.

[59] K. J. Holyoak and P. Thagard. *Mental leaps: Analogy in creative thought*. MIT Press, 1996.

[60] G. J. Hunter and M. F. Goodchild. Managing uncertainty in spatial databases: Putting theory into practice. *Journal of Urban and Regional Information Systems Association*, 5(2):55–62, 1993.

[61] E. Hutchins. *Cognition in the Wild*. MIT Press, 1994.

[62] W. H. Inmon, editor. *Building the Data Warehouse*. Wiley, 2002.

[63] P. Isenberg and D. Fisher. Collaborative brushing and linking for co-located visual analytics of document collections. *Computer Graphics Forum*, 28(3):1031–1038, June 2009.

[64] D. A. Keim. Visual exploration of large data sets. *Communications of the ACM (CACM)*, 44(8):38–44, 2001.

[65] D. A. Keim, F. Mansmann, J. Schneidewind, and H. Ziegler. Challenges in visual data analysis. In *Information Visualization (IV 2006), Invited Paper, July 5-7, London, United Kingdom*. IEEE Press, 2006.

[66] D. A. Keim, F. Mansmann, and J. Thomas. Visual analytics: How much visualization and how much analytics? *SIGKDD Explorations*, 11(2):5–8, December 2009.

[67] D. A. Keim and J. Thomas. Scope and challenges of visual analytics, 2007. Tutorial at IEEE Visualization, http://infovis.uni-konstanz.de/tutorials/.

[68] G. Klein. *Sources of Power: How People Make Decisions*. MIT Press, Feb 1999.

[69] M. J. Kraak and F. Ormeling. *Cartography: visualization of geospatial data*. Pearson Education, 2003.

[70] J. Kruger, J. Schneider, and R. Westermann. Clearview: An interactive context preserving hotspot visualization technique. *IEEE Transactions on Visualization and Computer Graphics*, 12(5):941–948, 2006.

[71] J. Lin, E. Keogh, S. Lonardi, J. P. Lankford, and D. M. Nystrom. VizTree: a tool for visually mining and monitoring massive time series databases. In *VLDB '04: Proceedings of the Thirtieth international conference on Very large data bases*, pages 1269–1272. VLDB Endowment, 2004.

[72] Z. Liu, N. Nersessian, and J. Stasko. Distributed cognition as a theoretical framework for information visualization. *IEEE Transactions on Visualization and Computer Graphics*, 14(6):1173–1180, 2008.

[73] A. M. MacEachren. *How maps work*. Guilford Press New York, 1995.

[74] A. M. MacEachren and I. Brewer. Developing a conceptual framework for visually-enabled geocollaboration. *International Journal of Geographical Information Science*, 18(1):1–34, 2004.

[75] O. Z. Maimon and L. Rokach. *Data mining and knowledge discovery handbook*. Springer New York, Inc., 2005.

[76] F. Mansmann, F. Fischer, S. C. North, and D. A. Keim. Visual support for analyzing network traffic and intrusion detection events using treemap and graph representations. In *CHiMiT '09: Proceedings of the Symposium on Computer Human Interaction for the Management of Information Technology*, pages 19–28. ACM, 2009.

[77] R. E. Mayer. The search for insight: Grappling with Gestalt psychology's unanswered questions. *The nature of insight*, pages 3–32, 1995.

[78] J. E. McGrath. Methodology matters: Doing research in the social and behavioural sciences. In *Readings in Human-Computer Interaction: Toward the Year 2000*. Morgan Kaufmann, 1995.

[79] H. J. Miller and J. Han. *Geographic data mining and knowledge discovery*. CRC Press, 2001.

[80] T. Munzner. A nested process model for visualization design and validation. *IEEE Transactions on Visualization and Computer Graphics*, 15(6):921–928, November/December 2009.

[81] U. Neisser. *Cognition and Reality*. W.H. Freeman, San Francisco, 1976.

[82] C. North. Toward measuring visualization insight. *IEEE Computer Graphics and Applications*, 26(3):6–9, 2006.

[83] C. O'Malley and S. Draper. Representation and interaction: Are mental models all in the mind. *Models in the Mind: Theory, Perspective & Application*, pages 73–91, 1992.

[84] M. Di Penta, R. Stirewalt, and E. Kraemer. Designing your next empirical study on program comprehension. In *Proc. IEEE Intl. Conf. on Program Comprehension (ICPC)*, pages 281–285, 2007.

[85] P. Pirolli and S. Card. The sensemaking process and leverage points for analyst technology as identified through cognitive task analysis. In *Proceedings of International Conference on Intelligence Analysis*, volume 2005, pages 2–4, 2005.

[86] C. Plaisant. The challenge of information visualization evaluation. In *Proceedings of the working conference on Advanced Visual Interfaces*, pages 109–116. ACM, 2004.

[87] C. Plaisant, J-D. Fekete, and G. G. Grinstein. Promoting insight-based evaluation of visualizations: From contest to benchmark repository. *IEEE Trans. Vis. Comput. Graph.*, 14(1):120–134, 2008.

[88] C. Plaisant, G. Grinstein, and J. Scholtz. Guest editors' introduction: Visual-analytics evaluation. *IEEE Computer Graphics and Applications*, 29(3):16–17, May/June 2009.

[89] VAST Challenge Portal. http://vac.nist.gov.

[90] M. C. Potter. Very short-term conceptual memory. *Memory & Cognition*, 21(2):156–161, 1993.

[91] K. Puolamäki and A. Bertone. Introduction to the special issue on visual analytics and knowledge discovery. *SIGKDD Explorations*, 11(2):3–4, December 2009.

[92] G. Ross and M. Chalmers. A visual workspace for constructing hybrid multidimensional scaling algorithms and coordinating multiple views. *Information Visualization*, 2(4):247–257, 2003.

[93] D. Rusu, B. Fortuna, D. Mladenić, M. Grobelnik, and R. Sipoš. Visual analysis of documents with semantic graphs. In *Proceedings of the ACM SIGKDD Workshop on Visual Analytics and Knowledge Discovery*, pages 66–73, 2009.

[94] J. D. Saffer, V. L. Burnett, G. Chen, and P. van der Spek. Visual analytics in the pharmaceutical industry. *IEEE Computer Graphics and Applications*, 24(5):10–15, 2004.

[95] P. Saraiya, C. North, and K. Duca. An insight-based methodology for evaluating bioinformatics visualizations. *IEEE Transactions on Visualization and Computer Graphics*, 11(4):443–456, 2005.

[96] J. Seo and B. Shneiderman. Interactively exploring hierarchical clustering results. *Computer*, 35(7):80–86, 2002.

[97] J. Seo and B. Shneiderman. *From Integrated Publication and Information Systems to Information and Knowledge Environments*, volume 3379 of *Lecture Notes in Computer Science*, chapter A Knowledge Integration Framework for Information Visualization, pages 207–220. Springer, 2005.

[98] B. Shneiderman. The eyes have it: A task by data type taxonomy for information visualizations. In *IEEE Symposium on Visual Languages*, pages 336–343, 1996.

[99] B. Shneiderman. Extreme visualization: squeezing a billion records into a million pixels. In *Proceedings of the 2008 ACM SIGMOD international conference on Management of data*, pages 3–12, 2008.

[100] B. Shneiderman and C. Plaisant. *Designing the user interface: strategies for effective human-computer interaction*. Addison-Wesley, 4th edition, 2004.

[101] B. Shneiderman and C. Plaisant. Strategies for evaluating information visualization tools: multi-dimensional in-depth long-term case studies. In *Proc. AVI workshop on Novel Evaluation Methods for Information Visualization*, pages 1–7. ACM, 2006.

[102] D. J. Simons and R. A. Rensink. Change blindness: Past, present, and future. *Trends in Cognitive Sciences*, 9(1):16–20, 2005.

[103] T. A. Slocum, R. B. Mcmaster, F. C. Kessler, and H. H. Howard. Thematic cartography and geovisualization (Prentice Hall Series in Geographic Information Science). 2008.

[104] R. Spence. *Information Visualization - Design for Interaction*. Pearson Education Limited, 2nd edition, 2007.

[105] R. Spence. The broker. In *Human Aspects of Visualization*. Springer LNCS, 2010.

[106] R.J. Sternberg and J.E. Davidson. *The nature of insight*. MIT Press Cambridge, MA, 1995.

[107] C. Stolte, D. Tang, and P. Hanrahan. Polaris: A system for query, analysis, and visualization of multidimensional relational databases. *IEEE Transactions on Visualization and Computer Graphics*, 08(1):52–65, 2002.

[108] P-N. Tan, M. Steinbach, and V. Kumar. *Introduction to Data Mining*. Addison Wesley, 2005.

[109] R. Theron. Visual analytics of paleoceanographic conditions. In *Proceedings of the IEEE Symposium on Visual Analytics Science & Technology*, pages 19–26, 2006.

[110] J. Thomas. Taxonomy for visual analytics: Seeking feedback. *VAC Views*, May 2009.

[111] J. Thomas and K. Cook, editors. *Illuminating the Path: Research and Development Agenda for Visual Analytics*. IEEE Press, 2005.

[112] W. Tobler. A computer movie simulating urban growth in the Detroit region. *Economic Geography*, 46(2):234–240, 1970.

[113] C. Tominski, J. Abello, and H. Schumann. CGV–An interactive graph visualization system. *Computers & Graphics*, 33(6):660–678, 2009.

[114] X. Tricoche, G. Scheuermann, and H. Hagen. Tensor topology tracking: A visualization method for time-dependent 2D symmetric tensor fields. *Computer Graphics Forum*, 20(3):461–470, 2001.

[115] E. R. Tufte. *The visual display of quantitative information*. Graphics Press Cheshire, CT, 1983.

[116] J. W. Tukey. *Exploratory Data Analysis*. Addison-Wesley, Reading MA, 1977.

[117] L. Tweedie, R. Spence, H. Dawkes, and H. Su. Externalising abstract mathematical models. In *Proceedings of the SIGCHI conference on human factors in computing systems: common ground*, page 406. ACM, 1996.

[118] L. Tweedie, R. Spence, D. Williams, and R. Bhogal. The Attribute Explorer. In *CHI '94: Conference companion on human factors in computing systems*, pages 435–436. ACM, 1994.

[119] J. J. van Wijk and E. R. van Selow. Cluster and calendar based visualization of time series data. In *INFOVIS*, pages 4–9, 1999.

[120] L. Voinea, J. J. Lukkien, and A. Telea. Visual assessment of software evolution. *Science of Computer Programming*, 65(3):222–248, 2007.

[121] L. Voinea and A. Telea. Case study: Visual analytics in software product assessments. In *In Proceedings of IEEE VISSOFT*, pages 65–72, 2009.

[122] C. Ware. *Information visualization: perception for design*. Morgan Kaufmann, 2004.

[123] C. Ware. *Visual thinking for design*. Morgan Kaufmann, 2008.

[124] J. Widom. Trio: A system for integrated management of data, accuracy, and lineage. Citeseer, 2005.

[125] P. C. Wong and J. Thomas. Visual analytics. *IEEE Computer Graphics and Applications*, 24(5):20–21, 2004.

[126] J. S. Yi, Y. Kang, J. Stasko, and J. Jacko. Toward a deeper understanding of the role of interaction in information visualization. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1224–1231, 2007.

[127] J. S. Yi, Y. Kang, J. T. Stasko, and J. Jacko. Understanding and characterizing insights: how do people gain insights using information visualization? In *BELIV '08: Proceedings of the 2008 conference on BEyond time and errors*, pages 1–6. ACM, 2008.

[128] J. Zhang and D. A. Norman. Representations in distributed cognitive tasks. *Cognitive science*, 18(1):87–122, 1994.

[129] Y. Zhu. Measuring effective data visualization. *Advances in Visual Computing*, pages 652–661, 2007.