

## Bibliography

- [AACO88] A. Albano, L. Alfo, S. Coluccini, and R. Orsini. An Overview of Sidereus, A Graphical Database Schema Editor for Galileo. In *International Conference on Extending Database Technology*, pages 567-571, Venice, Italy, March 1988.
- [AAD+ 94] A. Auddino, E. Amiel, Y. Dennebouy, Y. Dupont, E. Fontana, S. Spaccapietra, and Z. Tari. Database Visual Environments Based on Advanced Data Models. In *AVI'92: Proceedings of the Workshop on Advanced Visual Interfaces*, pages 156-172, Rome, Italy, June 1994.
- [ACS90] M. Angelaccio, T. Catarci, and G. Santucci. QDB\*: A Graphical Query Language with Recursion. *IEEE Transactions on Software Engineering*, 16(10):1150-1163, October 1990.
- [AGS90] R. Agrawal, N.H. Gehani, and J. Srinivasan. OdeView: The Graphical Interface to Ode. In *Proceedings of the 1990 ACM-SIGMOD International Conference on the Management of Data*, pages 34-43, Atlantic City, N.J., May 1990.
- [AS94] C. Ahlberg and B. Schneiderman. Visual Information Seeking: Tight Coupling of Dynamic Query Filers with Starfield Displays. In *CHI '94, Proceedings of the Conference on Human Factors in Computing Systems*, pages 313-318, Boston, Massachusetts, April 1994.
- [BCCL91] C. Batini, T. Catarci, M.F. Costabile, and S. Levialdi. Visual Query Systems. Technical Report RAP.04.91, Uniersite Degli Studi Di Roma, Dipartimento Di Informatica E Sistemistica, March 1991.
- [BCD94] P. Barclay, A. Crerar, and K. Davidson. Interfaces to Data Models, Taking a Step Backwards. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 306-329, Ambleside, U.K., July 1994.
- [BCN92] C. Batini, S. Ceri, and S. B. Navathe. *Conceptual Database Design: An Entity-Relationship Approach*. The Benjamin/Cummings Publishing Company, Inc., Redwood City, California, 1992.
- [BFG94] J. Boyle, J. Fothergill, and P. Gray. Amaze: A 3-D Graphical User Interface for an Object-Oriented Database. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 127-142, Ambleside, U.K., July 1994.
- [BH86] D. Bryce and R. Hull. SNAP: A Graphics-based Schema Manager. In *Proceedings of the International Conference on Data Engineering*, pages 151-164, Los Angeles, California, February 1986.
- [BM89] J. R. Bedell and F. J. Maryanski. Extensible Semantic Automata for Modular Design Systems. In *Visual Database Systems*, pages 43-56. Elsevier Science Publishers B.V., 1989.
- [BM94] S. Benford and J. Mariani. Virtual Environments for Data Sharing and Visualization - Populated Information Terrains. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 168-184, Ambleside, U.K., July 1994.
- [BMP+ 92] P. Borrás, J.C. Mamou, D. Plateau, B. Poyet, and D. Tallot. Building user interface for database applications. *SIGMOD Record*, 21(1):32-38, March 1992.
- [BOD+94] L. Bartram, R. Ovans, J. Dill, M. Dyck, A. Ho and W. S. Havens. Contextual Assistance in User Interfaces to Complex, Time-Critical Systems: The Intelligent Zoom. In *Graphics Interface 1994*. 1994.

- [BP90] K. Bohringer and F. N. Paulisch. Using Constraints to Achieve Stability in Automatic Graph Layout Algorithms. In *CHI '90, Proceedings of the Conference on Human Factors in Computing Systems*, pages 43-51, Seattle, Washington, April 1990.
- [BR90] J. Bell and L. Rowe. A Case Study of Ad Hoc Query Languages to Databases. *Technical Report UCB/ERL M90/78*, University of California, Berkeley, September 1990.
- [BSH94] B. B. Bederson, L. Stead, and J. D. Hollan. Pad++: Advances in Multiscale Interfaces. In *CHI '94, Companion to the Conference on Human Factors in Computing Systems*, pages 315-316, Boston, Massachusetts, April 1994.
- [CCL91] T. Catarci, M.F. Costabile, and S. Levialdi. Iconic and Diagrammatic Interfaces, an Integrated Approach. In *IEEE Workshop on Visual Languages*, 1991.
- [CCS94] T. Catarci, S.K. Chang, and G. Santucci. Query Representation and Management in a Multiparadigmatic Visual Query Environment. *Journal of Intelligent Information Systems*, 3(3/4):299-330, July 1994.
- [Che76] P. Chen. The Entity Relationship Model - Towards a Unified View of Data. *ACM Transactions on Database Systems*, 2(1), March 1976.
- [CM90] M. Consens and A. Mendelzon. GraphLog: a Visual Formalism for Real Life Recursion. In T.I. Kunnii, editor, *Visual Database Languages*, pages 404-415. North-Holland, Amsterdam, The Netherlands, 1990.
- [CM93] M. Consens and A.O. Mendelzon. Hy+: A Hygraph-based Query and Visualization System. *Technical Report CSRS-285*, University of Toronto, June 1993.
- [Coo90] R. Cooper. Configurable Data Modelling Systems. In *Proceedings of the 9th Conference on the Entity Relationship Approach*, pages 57-73, Lausanne, Switzerland, October 1990.
- [Cre89] P. Creasy. ENIAM: A More Complete Conceptual Schema Language. In *Proceedings of the International Conference on Very Large Data Bases*, pages 107-114, Amsterdam, The Netherlands, August 1989.
- [Cru92] I. F. Cruz. DOODLE: A Visual Language for Object-Oriented Databases. In *Proceedings of ACM SIGMOD International Conference on Management of Data*, pages 71-80, San Diego, California, June 1992.
- [Cru93] Isabel Cruz. User-Defined Visual Languages for Querying Data. *Technical Report CS-93-58*, Brown University, December 1993.
- [CS89] P. Chuang and F. Springsteel. ERDDS - the Intelligent E-R-based Database Design System with Visual Semantics Know Base Prototype. In *Visual Database Systems*, pages 57-86. Elsevier Science Publishers B.V., 1989.
- [CS94] T. Catarci and G. Santucci. A Visual Approach to Multilinear Recursion. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 65-83, Ambleside, U.K., July 1994.
- [CSF92] R. Carapuca, A. Serrano, and J. Farinha. Automatic Derivation of Graphic Human-Machine Interfaces for Databases. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 176-192, Glasgow, Scotland, July 1992.
- [CT94] T. Catarci and L. Tarantino. Database Querying by Hypergraph Manipulation. In

*Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 84-103, Ambleside, U.K., July 1994.

- [Dat77] C.J. Date. *An Introduction to Database Systems, Second Edition*. Addison-Wesley Publishing Company, Reading, Massachusetts, 1977.
- [DBC+ 92] J. Durand, H. Brunner, R. Cuthbertson, S. Fogel, T. McCandless, R. Sparks, and L. Sylvan. Data Model and Query Algebra for a Model-Based, Multi-Modal User Interface. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 311-337, Glasgow, Scotland, July 1992.
- [dO94] J.L. de Oliveira. On the Development of User Interface Systems for Object-Oriented Databases. In *AVI'94: Proceedings of the Workshop on Advanced Visual Interfaces*, pages 237-239, Bari, Italy, June 1994.
- [DP94] A. Dix and A. Patrick. Query by Browsing. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 236-248, Ambleside, U.K., July 1994.
- [DS90] P. Dewan and M. Solomon. An Approach to Support Automatic Generation of User Interfaces. *ACM Transactions on Programming Languages and Systems*, 12(4):566-609, October 1990.
- [DZ86] J. Davison and S. Zdonik. A Visual Interface for a Database with Version Management. *ACM Transactions on Office Information Systems*, 4(3):226-256, July 1986.
- [EC92] D. England and R. Cooper. Reconfigurable User Interfaces for Databases. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 338-352, Glasgow, Scotland, July 1992.
- [Eig93] Frank Ch. Eigler. Hy+ User's Manual. *Technical Report CSRS-285*, University of Toronto, June 1993.
- [EL85] R. Elmasri and J. Larson. A Graphical Query Facility for ER Database. In *Proceedings of the 1985 IEEE Conference on the E-R Approach*, pages 236-245, Chicago, Illinois, October 1985.
- [ET89] P. Eades and R. Tamassia. Algorithms for Drawing Graphs: An Annotated Bibliography. *Technical Report CS-89-09*, Brown University, October 1989.
- [EV94] B. Eaglestone and R. Vertegaal. Intuitive Human Interfaces for an Audio-Database. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 329-342, Ambleside, U.K., July 1994.
- [Fer94] F. A. Ferrara. The KIM Query System. *SIGCHI Bulletin*, 26(3):30-39, July 1994.
- [FM92] B. Flynn and D. Maier. Supporting Display Generation for Complex Database Objects. *SIGMOD Record*, 21(1):18-24, March 1992.
- [FvDFH90] J. D. Foley, A. van Dam, S. K. Feiner, and J.F. Hughes. *Computer Graphics: Principles and Practice*. Addison-Wesley, Reading, Massachusetts, 1990.
- [GWJ91] A. Gupta, T. Weymouth, and R. Jain. Semantic Queries with Pictures: The VIMSYS Model. In *Proceedings of the International Conference on Very Large Data Bases*, pages 69-79, Barcelona, Spain, September 1991.
- [HGPN92] M. Halper, J. Geller, Y. Perl, and E. Neuhold. A Graphical Schema Representation for

- Object-Oriented Databases. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 282-307, Glasgow, Scotland, July 1992.
- [HGR94] D. Haw, C. Goble, and A. Rector. GUIDANCE: Making it Easy for the User to be an Expert. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, July 1994.
- [HIL94] E. M. Haber, Y. E. Ioannidis, and M. Livny. Foundations of Visual Metaphors for Schema Display. *Journal of Intelligent Information Systems*, 3(3/4):263-298, July 1994.
- [HP89] G. Houben and J. Paredaens. A Graphical Interface Formalism: Specifying Nested Relational Databases. In *Visual Database Systems*, pages 257-276. Elsevier Science Publishers B.V., 1989.
- [HR85] S. Heiler and A. Rosenthal. G-Whiz\*, a Visual Interface for the Functional Model with Recursion. In *Proceedings of the International Conference on Very Large Data Bases*, pages 209-218, Stockholm, Sweden, August 1985.
- [IL92] Y. Ioannidis and M. Livny. Conceptual Schemas: Multi-Faceted Tools for Desktop Scientific Experiment Management. *International Journal of Intelligent and Cooperative Information Systems*, December 1992.
- [ILH92] Y. Ioannidis, M. Livny, and E. M. Haber. Graphical User Interfaces for the Management of Scientific Experiments and Data. *SIGMOD Record*, 21(1):47-53, March 1992.
- [ILH+ 93] Y. Ioannidis, M. Livny, E. M. Haber, R. Miller, O. Tsatalos, and J. Wiener. Desktop Experiment Management. *IEEE Data Engineering Bulletin*, 16(1):19-23, March 1993.
- [IS94] R. Inder and J. Stader. Bags and Viewers: A Metaphor for Intelligent Database Access. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 215-235, Ambleside, U.K., July 1994.
- [JWZ93] C. Janssen, A. Weisbecker, and J. Ziegler. Generating User Interfaces from Data Models and Dialogue Net Specifications. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 419-423, Amsterdam, The Netherlands, April 1993.
- [KF91] W. Kuhn and A. U. Frank. A Formalization of Metaphors and Image-Schemas in User Interfaces. In H.M. Mark and A.U. Frank, editors, *Cognitive and Linguistic Aspects of Geographic Space*, pages 419-434. Kluwer Academic Publisher, Amsterdam, The Netherlands, 1991.
- [KF93] W. C. Kim and J. D. Foley. Providing High-level Control and Expert Assistance in the User Interface Presentation Design. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 430-437, Amsterdam, The Netherlands, April 1993.
- [KH86] A. Kaneko and Y. Hara. A Multimedia Document Base System for Office Work Support. In *IEEE COMPSAC*, pages 336-343, Chicago, Illinois, October 1986.
- [KM84] R. King and S. Melville. SKI: A Semantic-Knowledgeable Interface. In *Proceedings of the International Conference on Very Large Data Bases*, pages 30-33, Singapore, August 1984.
- [KM89] M. Kuntz and R. Melchert. Pasta-3's Graphical Query Language: Direct Manipulation, Cooperative Queries, Full Expressive Power. In *Proceedings of the International Conference on Very Large Data Bases*, pages 97-105, Amsterdam, The Netherlands, August 1989.

- [KN87] R. King and M. Novak. Freeform: A User-Adaptable Form Management System. In *Proceedings of the International Conference on Very Large Data Bases*, pages 331-339, Brighton, U.K., August 1987.
- [KN89] R. King and M. Novak. FaceKit: A Database Interface Design Toolkit. In *Proceedings of the International Conference on Very Large Data Bases*, pages 115-123, Amsterdam, The Netherlands, August 1989.
- [KN92] R. King and M. Novak. Building Reusable Data Representations with FaceKit. *SIGMOD Record*, 21(1):11-17, March 1992.
- [LCC94] C-T Liu, S-K Chang, and P. K. Chrysanthis. Database Schema Evolution using EVER Diagrams. In *AVI'94: Proceedings of the Workshop on Advanced Visual Interfaces*, pages 123-132, Bari, Italy, June 1994.
- [LCT+ 90] H. Lam, H. M. Chen, F. S. Ty, J. Qiu, and S.Y.W. Su. A Graphical Interface for an Object-Oriented Query Language. In *IEEE COMPSAC*, pages 231-235, 1990.
- [LCV88] M. A. Linton, P. R. Calder, and J. M. Vlissides. InterViews: A C++ Graphical Interface Toolkit. *Technical Report CSL-TR-88-358*, Stanford University, July 1988.
- [LSN89] M. Leong, S. Sam, and D. Narasimhalu. Towards a Visual Language for an Object-Oriented Multi-Media Database System. In *Visual Database Systems*, pages 465-495. Elsevier Science Publishers B.V., 1989.
- [Mes88] E. B. Messinger. Automatic Layout of Large Directed Graphs. *Technical Report 88-07-08*, Department of Computer Science, University of Washington, Seattle, July 1988.
- [MIR93] R. Miller, Y. Ioannidis, and R. Ramakrishnan. The use of information capacity in schema integration and translation. In *Proceedings of the International Conference on Very Large Data Bases*, Dublin, Ireland, August 1993.
- [Miu91] T. Miura. A Visual Data Manipulation Language for a Semantic Data Model. In *IEEE COMPSAC*, pages 212-218, Tokyo, Japan, September 1991.
- [MMK93] B. A. Myers, R. G. McDaniel, and D. S. Kosbie. Marquise: Creating Complete User Interfaces by Demonstration. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 293-300, Amsterdam, The Netherlands, April 1993.
- [Moe90] S. Moen. Drawing dynamic trees. *IEEE Software*, pages 21-28, July 1990.
- [Mon94] S. Monk. A Graphical User Interface for Schema Evolution in an Object-Oriented Database. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 185-196, Ambleside, U.K., July 1994.
- [MP94] P. Messer and N. Patel. Domain Restrictive Interfaces Using Databases. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 266-288, Ambleside, U.K., July 1994.
- [MPS94] A. Massari, S. Pavani, and L. Saladini. QBI: An Iconic Query System for Inexpert Users. In *AVI'94: Proceedings of the Workshop on Advanced Visual Interfaces*, pages 240-242, Bari, Italy, June 1994.
- [Mye83] B. A. Myers. INCENSE: A System for Displaying Data Structures. *Computer Graphics*, 17(3):115-125, July 1983.

- [Nat88] Natural Languages, Inc. *Natural Language™ Database Retrieval System User Manual*. 1988.
- [Noi93] E. Noik. Exploring Large Hyperdocuments: Fisheye Views of Nested Networks. *Technical Report RSRI-285*, University of Toronto, June 1993.
- [Nor92] M. C. Norrie. An Interactive System for Object-Oriented Database Design. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 9-24, Glasgow, Scotland, July 1992.
- [OMO89] G. Ozsoyglu, V. Matos, and Z. M. Ozsoyglu. Query Processing Techniques in the Summary-Table-by-Example Database Query Language. *ACM Transactions on Database Systems*, 14(4):526-573, December 1989.
- [Ope90] Open Software Foundation, Englewood Cliffs, New Jersey. *OSF/Motif Style Guide*, Revision 1.0, 1990.
- [Ous84] J. Ousterhout. Corner stitching: A data structuring technique for vlsi layout tools. *IEEE Transactions on Computer-Aided Design*, pages 87-100, January 1984.
- [OZL94] B.C. Ooi, C. Zhao, and H. Lu. DUET - A Database User Interface Design Environment. *Journal of Intelligent Information Systems*, 3(3/4):331-356, July 1994.
- [PaQDK94] N. Paton, G. al Qaimari, K. Doan, and A. C. Kilgour. Techniques for the Effective Evaluation of Database Interfaces. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 343-360, Ambleside, U.K., July 1994.
- [PaQK92] N. W. Paton, G. al Qaimari, and A. C. Kilgour. An Extensible Interface to an Extensible Object-Oriented Database System. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 265-281, Glasgow, Scotland, July 1992.
- [PdB92] J. Paredaens and J. Van den Bussche. An Overview of GOOD. *SIGMOD Record*, 21(1):25-31, March 1992.
- [PK94] A. Papantonakis and P. J. H. King. Gql, a declarative graphical query language based on the functional data model. In *AVI'94: Proceedings of the Workshop on Advanced Visual Interfaces*, pages 113-122, Bari, Italy, June 1994.
- [Rad92] K. Radermacher. An Extensible Graphical Programming Environment for Semantic Modelling. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 353-373, Glasgow, Scotland, July 1992.
- [RK94] M. Rapley and J. Kennedy. Three Dimensional Interface for an Object Oriented Database. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 143-167, Ambleside, U.K., July 1994.
- [RKS+ 90] L. Rowe, J. Konstan, B. Simth, S.Seitz, and C. Lin. The Picasso Application Framework. *Technical Report UCB/ERL M90/18*, University of California, Berkeley, March 1990.
- [Row85] L. A. Rowe. "Fill-in-the-Form" Programming. In *Proceedings of the International Conference on Very Large Data Bases*, Stockholm, Sweden, August 1985.
- [SAD+ 93] M. Stonebraker, R. Agrawal, U. Dayal, E. J. Neuhold, and Andreas Reuter. DBMS Research at a Crossroads: The Vienna Update. In *Proceedings of the International Conference on Very Large Data Bases*, pages 688-692, Dublin, Ireland, August 1993.

- [SB94] M. Sankar and M. H. Brown. Graphic fisheye views of graphs. In *CHI '92, Proceedings of the Conference on Human Factors in Computing Systems*, pages 83-91, Monterey, California, May 1992.
- [Sch92] H. Schoning. A Graphical Interface to a Complex-Object Database Management System. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 193-208, Glasgow, Scotland, July 1992.
- [SCSM92] P. Sawyer, A. Colebourne, I. Sommervill, and J. Mariani. Object-Oriented Database Systems: a Framework for User Interface Development. In *Proceedings of the First International Workshop on User Interfaces to Databases*, pages 25-38, Glasgow, Scotland, July 1992.
- [SCT91] K.L. Siau, H.C. Chan, and K.P. Tan. Visual Knowledge Query Language as a Front-end to Relational Systems. In *IEEE COMPSAC*, pages 373-378, Tokyo, Japan, September 1991.
- [SFB94] Maureen C. Stane, Ken Fishkin, and Eric A. Bier. The Movable Filter as a User Interface Tool. In *CHI '94, Proceedings of the Conference on Human Factors in Computing Systems*, pages 306-312, Boston, Massachusetts, April 1994.
- [SFG93] P. 'Noi' Sukavariya, J. D. Foley, and T. Griffith. A Second Generation User Interface Design Environment: The Model and The Runtime Architecture. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 375-382, Amsterdam, The Netherlands, April 1993.
- [SK82] M. Stonebraker and J. Kalash. TIMBER - A Sophisticated Relational Browser. In *Proceedings of the International Conference on Very Large Data Bases*, pages 1-10, Mexico City, Mexico, September 1982.
- [SLN93] P. Szekely, P. Luo, and R. Neches. Beyond Interface Builders: Model Based Interface Tools. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 383-390, Amsterdam, The Netherlands, April 1993.
- [SM94] M.N. Md Sap and D.R. McGreggor. SFQI: Semi-Formal Query Language Interface to Relational Database. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 104-126, Ambleside, U.K., July 1994.
- [SP94] G. Santucci and F. Palmisano. A Dynamic Form Based Data Visualizer for Semantic Query Languages. In *Proceedings of the Second International Workshop on User Interfaces to Databases*, pages 249-266, Ambleside, U.K., July 1994.
- [THTI90] K. Tsuda, M. Hirakawa, M Tanaka, and T. Ichickawa. Iconic Browser: An Iconic Retrieval System for Object-Oriented Databases. *Journal of Visual Languages and Computing*, 1, 1990.
- [TJ93] R.N. Taylor and G. F. Johnson. Separation of Concerns in the Chiron-1 User Interface Development and Management System. In *INTERCHI '93, Proceedings of the Conference on Human Factors in Computing Systems*, pages 367-374, Amsterdam, The Netherlands, April 1993.
- [Tuf83] E. R. Tufte. *The Visual Display of Quantitative Information*. Graphics Press, Cheshire, Conn., 1983.
- [Tuf90] E. R. Tufte. *Envisioning Information*. Graphics Press, Cheshire, Conn., 1990.
- [TWB+89] T. J. Teory, G. Wei, D. L. Bolton and J.A. Koenig. ER Model Clustering as an Aid for User