References

Alfeld, P. (1989), Scattered Data Interpolation in Three or More Variables, in: Lyche, T., and Schumaker, L., eds., *Mathematical Methods in Computer Aided Geometric Design*, Academic Press, pp. 1–33.

Arge, E., Dæhlen, M., Lyche, T., and Mørken, K. (1990), Constrained Spline Approximation of Functions and Data Based on Constrained Knot Removal, in: Mason, J.C., and Cox, M.G., eds., *Algorithms for Approximation II*, Chapman and Hall, New York, pp. 4–20.

Ball, A.A. (1974), Consurf I, *CAD*, Vol. **6**, pp. 243–249.

Ball, A.A. (1975), Consurf II, *CAD*, Vol. **7**, pp. 237–242.

Ball, A.A. (1977), Consurf III, *CAD*, Vol. **9**, pp. 9–12.

Ballard, D.H., and Brown, C.M. (1982), *Computer Vision*, Prentice Hall.

Banchoff, T.F. (1990), *Beyond the Third Dimension*, Scientific American Library, New York.

Barnhill, R.E. (1985), Surfaces in Computer Aided Geometric Design: A Survey with New Results, *Computer Aided Geometric Design*, Vol. **2**, No. **1-3**, pp. 1–17.

Barnhill, R.E., Birkhoff, G., and Gordon, W.J. (1973), Smooth Interpolation in Triangles, *Journal of Approximation Theory*, Vol. **8**, pp. 114–128.

Barnhill, R.E., and Farin, G. (1981), C^1 Quintic Interpolation over Triangles: Two Explicit Representations, *International Journal of Numerical Methods in Engineering*, Vol. **17**, pp. 1763–1778.

Barnhill, R.E., and Little, F.F. (1984), Three- and Four-Dimensional Surfaces, *The Rocky Mountain Journal of Mathematics*, Vol. **14**, No. **1**, pp. 77–102.

Bloomquist, B.K. (1990), *Contouring Trivariate Surfaces*, Masters Thesis, Arizona State University, Computer Science Department.

Boehm, W. (1982), On Cubics, a Survey, *Computer Graphics and Image Processing*, Vol. **19**, pp. 201–226.

Boehm, W., Gose, G., and Kahmann, J. (1977), *Methoden der Numerischen Mathematik* (Methods of Numerical Mathematics, in German), Vieweg, Braunschweig, Germany.

Boehm, W., Farin, G., and Kahmann, J. (1984), A Survey of Curve and Surface Methods in CAGD, *Computer Aided Geometric Design*, Vol. **1**, pp. 1–60.

Brauner, H. (1981), *Differentialgeometrie* (Differential Geometry, in German), Vieweg, Braunschweig, Germany.

Broida, J.G., and Williamson, S.G. (1989), *A Comprehensive Introduction to Linear Algebra,* Addison-Wesley, New York.

Calladine, C.R. (1986), Gaussian Curvature and Shell Structures, in: Gregory, J., ed., *Mathematics of Surfaces*, Clarendon Press, Oxford, pp. 179–196.

Carmo, M.P. do (1976), *Differential Geometry of Curves and Surfaces*, Englewood Cliffs, New Jersey.

Choi, B.K., Shin, H.Y., Yoon, Y.I., and Lee, J.W. (1988), Triangulation of Scattered Data in 3D Space, *CAD*, Vol. **20**, No. **5**, pp. 239–248.

Chuang, J.H., and Hoffmann, C.M. (1990), *Curvature Computations on Surfaces in n-Space*, Technical Report #90.2, The Leonardo Fibonacci Institute, Trento, Italy.

Cline, A.K., and Renka, R.J. (1984), A storage-efficient method for construction of a Thiessen triangulation, *The Rocky Mountain Journal of Mathematics*, Vol. **14**, No. **1**, pp. 119–139.

Dahmen, W. (1989), Smooth Piecewise Quadric Surfaces, in: Lyche, T., and Schumaker, L.L., eds., *Mathematical Methods in Computer Aided Geometric Design*, Academic Press, pp. 181–193.

Davis, P.J. (1975), *Interpolation and Approximation*, Dover Publications, New York.

Drebin, R.A., Carpenter, L., and Hanrahan, P. (1988), Volume Rendering, *Computer Graphics*, Vol. **22**, No. **4**, pp. 65–74.

Dürst M.J. (1988), Letters: Additional Reference to "Marching Cubes," *Computer Graphics*, Vol. **22**, No. **2**.

Dyn, N., Levin, D., and Rippa, S. (1990a), Data Dependent Triangulations for Piecewise Linear Interpolation, in: *IMA Journal of Numerical Analysis*, **10**, pp. 137–154.

Dyn, N., Levin, D., and Rippa, S. (1990b), Algorithms for the Construction of Data Dependent Triangulations, in: Mason, J.C., and Cox, M.G., eds., *Algorithms for Approximation II*, Chapman and Hall, New York, pp. 4–20.

Farin, G. (1983), Smooth Interpolation to Scattered 3D Data, in: Barnhill, R.E., and Boehm, W., eds., *Surfaces in CAGD*, North Holland, pp. 43–63.

Farin, G. (1986), Triangular Bernstein-Bézier Patches, *Computer Aided Geometric Design*, Vol. **3**, No. **2**, pp. 83–127.

Farin, G. (1990), *Curves and Surfaces for Computer Aided Geometric Design*, 2nd Edition, Academic Press.

Faux, I., and Pratt, M. (1979), *Computational Geometry for Design and Manufacture*, Ellis Horwood.

Foley, T.A. (1987), Interpolation and Approximation of Three- and Four-Dimensional Scattered Data, *Computational Mathematics Applications*, Vol. **13**, pp. 711–740.

Foley, T.A., and Lane, D.A. (1990), Visualization of Irregular Multivariate Data, *Proceedings of the IEEE Conference Visualization '90*, San Francisco, pp. 247–254.

Foley, T.A., Lane, D.A., and Nielson, G.M. (1990), Towards Animating Ray-Traced Volume Visualization, *Visualization and Computer Animation Journal*, Vol. **1**, No. **1**, pp. 2–8.

Franke, R., and Nielson, G.M. (1991), Scattered Data Interpolation and Applications: A Tutorial and Survey, in: Hagen, H., and Roller, D., eds., *Geometric Modeling: Methods and Applications*, Springer-Verlag, pp. 131–160.

Fu, K.S., Gonzalez, R.C., and Lee, C.S.G. (1987), *Robotics*, McGraw-Hill.

Fuchs, H., Levoy, M., and Pizer, S.M. (1989), Interactive Visualization of 3D Medical Data, *Computer*, Vol. **22**, No. **8**, pp. 46–51.

Hagen, H., and Pottmann, H. (1989), Curvature Continuous Triangular Interpolants, in: Lyche, T., and Schumaker, L.L., eds., *Mathematical Methods in Computer Aided Geometric Design*, Academic Press, pp. 373–384.

Hamann, B. (1988), *Glättungsalgorithmen für Kurven und Flächen in CAGD* (Algorithms for Smoothing Curves and Surfaces in CAGD, in German), Masters thesis, Technical University of Braunschweig, Computer Science Department, Germany.

Hamann, B. (1990a), Visualisierungstechniken zur Darstellung dreidimensionaler Datenmengen (Techniques for Visualizing Three-dimensional Data Sets, in German), in: *CAD Computergraphik*, Vol. **14**, No. **2**, Austria, pp. 129–139.

Hamann, B. (1990b), Modeling Contours of Trivariate Data, in: *Mathematical Modelling and Numerical Analysis (Modélisation Mathématique et Analysis Numérique)*, Vol. **26**, No. **1**, France, pp. 51–75.

Hamann, B., Farin, G., and Nielson, G.M. (1990), A Parametric Triangular Patch Based on Generalized Conics, in: Farin, G., ed., *NURBS for Curve and Surface Design*, SIAM, Philadelphia, pp. 75–85.

Hamann, B. and Foley, T.A. (1991), A Quartic Spline Based on a Variational Approach, manuscript.

Herron, G. (1985), Smooth Closed Surfaces with Discrete Triangular Interpolants, *Computer Aided Geometric Design*, Vol. **2**, No. **4**, pp. 297–306.

Hoschek, J., and Lasser, D. (1989), *Grundlagen der Geometrischen Datenverarbeitung* (Fundamentals of Geometrical Data Processing, in German), Teubner, Stuttgart, Germany.

Kajiya, J., and Herzen, B. von (1984), Ray Tracing Volume Densities, *Computer Graphics*, Vol. **18**, No. **3**, pp. 165–173.

Lang, S. (1966), *Linear Algebra*, Addison-Wesley, New York.

Lasser, D. (1987), *Bernstein-Bézier-Darstellung trivariater Splines* (Bernstein-Bézier representation of trivariate splines, in German), Dissertation, Technical University of Darmstadt, Mathematics Department, Germany.

Lawson, C.L. (1977), Software for C^1 Surface Interpolation, in: Rice, J.R., ed., *Mathematical Software III*, Academic Press, pp. 161–194.

Le Méhauté, A.J.Y., and Lafranche, Y. (1989), A Knot Removal Strategy for Scattered Data in $\mathbb{R}^2$, in: Lyche, T., and Schumaker, L.L., eds., *Mathematical Methods in Computer Aided Geometric Design*, Academic Press, pp. 419–426.

Levoy, M. (1988), Display of Surfaces from Volume Data, *IEEE Computer Graphics and Applications*, Vol. **8**, No. **3**, pp. 29–37.

Levoy, M. (1990), Volume Rendering, *IEEE Computer Graphics and Applications*, Vol. **10**, No. **2**, pp. 33–40.

Lipschutz, M.M. (1980), *Differential Geometry*, Schaum's outline series, McGraw-Hill.

Long, M.B., Lyons, K., and Lam, J.K. (1989), Acquisition and Representation of 2D and 3D Data from Turbulent Flows and Flames, *Computer*, Vol. **22**, No. **8**, pp. 39–45.

Lorensen, W.E., and Cline, H.E. (1987), Marching Cubes: A High Resolution 3D Surface Construction Algorithm, *Computer Graphics*, Vol. **21**, No. **4**, pp. 163–169.

Lyche, T., and Mørken, K. (1987), Knot Removal for Parametric B-Spline Curves and Surfaces, *Computer Aided Geometric Design*, Vol. **4**, No. **3**, pp. 217–230.

Lyche, T., and Mørken, K. (1988), A Data-Reduction Strategy for Splines with Applications to the Approximation of Functions and Data, *IMA Journal of Numerical Analysis*, Vol. **8**, pp. 185–208.

Ney, D.R., Fishman, E.K., Magid, D., and Drebin, R.A. (1990), Volumetric Rendering, *IEEE Computer Graphics and Applications*, Vol. **10**, No. **2**, pp. 24–32.

Nielson, G.M. (1979), The Side-Vertex Method for Interpolation in Triangles, *Journal of Approximation Theory*, Vol. **25**, pp. 318–336.

Nielson, G.M. (1987), A Transfinite, Visually Continuous, Triangular Interpolant, in: Farin, G., ed., *Geometric Modeling: Algorithms and New Trends*, SIAM Publications, Philadelphia, pp. 235–246.

Nielson, G.M., and Franke, R. (1983), Surface Construction Based upon Triangulations, in: Barnhill, R.E., and Boehm, W., eds., *Surfaces in CAGD*, North Holland.

Nielson, G.M., and Hamann, B. (1990), Techniques for the Interactive Visualization of Volumetric Data, *Proceedings of the IEEE Conference Visualization*

'90, San Francisco, pp. 45–50.

Nielson, G.M. and Hamann, B. (1991), The Asymptotic Decider: Resolving the Ambiguity in Marching Cubes, in: Nielson, G.M. and Rosenblum, L. J., eds., *Visualization '91*, IEEE Computer Society Press, Los Alamitos, California, pp. 83–91.

Nielson, G.M., Foley, T.A., Hamann, B., and Lane, D.A. (1991), Visualizing and Modeling Scattered Multivariate Data, *IEEE Computer Graphics and Applications*, Vol. **11**, No. **3**, pp. 47–55.

O'Neill, B. (1969), *Elementary Differential Geometry*, Academic Press, 3rd Printing.

Petersen, C.S. (1984), Adaptive Contouring of Three-Dimensional Surfaces, *Computer Aided Geometric Design*, Vol. **1**, No. **1**, pp. 61–74.

Petersen, C.S., Piper, B.R., and Worsey, A.J. (1987), Adaptive Contouring of a Trivariate Interpolant, in: Farin, G., ed., *Geometric Modeling: Algorithms and New Trends*, SIAM Publications, Philadelphia, pp. 385–395.

Pillis, J.de (1969), *Linear Algebra,* Holt, Rinehart and Winston, New York.

Piper, B.R. (1987), Visually Smooth Interpolation with Triangular Bézier Patches, in: Farin, G., ed.,*Geometric Modeling: Algorithms and New Trends*, SIAM Publications, Philadelphia, pp. 221–233.

Pottmann, H. (1989), Scattered Data Interpolation Based upon Generalized Minimum Norm Networks, submitted to *Constructive Approximation Theory.*

Preparata, F.P., and Shamos, M.I. (1990), *Computational Geometry: An Introduction*, 2nd Printing, Springer-Verlag, New York.

Rath, W. (1988), Computergestützte Darstellungen von Hyperflächen des $\mathbb{R}^4$ und deren Anwendungsmöglichkeiten im CAGD (Computer Assisted Representations of Hypersurfaces in $\mathbb{R}^4$ and their Applications in CAGD, in German), *CAD Computergraphik*, Vol. **11**, No. **4**, pp. 111–117.

Sabella, P. (1988), A Rendering Algorithm for Visualizing 3D Scalar Fields, *Computer Graphics*, Vol. **22**, No. **4**, pp. 51–55.

Sederberg, T.W. (1985), Piecewise Algebraic Surface Patches, *Computer Aided Geometric Design*, Vol. **2**, No. **1**–**3**, pp. 53–59.

Spivak, M. (1970), *Comprehensive Introduction to Differential Geometry*, Vol. **1–5**, Publish or Perish, Waltham, Massachusetts.

Stead, S.E. (1984), Estimation of Gradients from Scattered Data, *Rocky Mountain Journal of Mathematics*, Vol. **14**, No. **1**, pp. 265–279.

Strubecker, K. (1955), *Differentialgeometrie I* (Differential Geometry I, in German), De Gruyter, Berlin, Germany.

Strubecker, K. (1958), *Differentialgeometrie II* (Differential Geometry II, in German), De Gruyter, Berlin, Germany.

Strubecker, K. (1959), *Differentialgeometrie III* (Differential Geometry III, in German), De Gruyter, Berlin, Germany.

Struik, D.J. (1961), *Lectures on Classical Differential Geometry*, Dover Publications, New York.

Tiede, U., Höhne, K.H., Bomans, M., Pommert, A., Riemer, M., and Wiebecke, G. (1990), Surface Rendering, *IEEE Computer Graphics and Applications*, Vol. **10**, No. **2**, pp. 41–53.

Weld, J.D. (1990), *Differential Geometric Interrogation of Parametrized Hyperpatches*, AT&T Bell Laboratories, Whippany, New Jersey 07981, manuscript.

Worsey, A.J., and Farin, G. (1987), An N-Dimensional Clough-Tocher Element, *Constructive Approximation*, Vol. **3**, pp. 99–110.

Yamaguchi, F. (1988), *Curves and Surfaces in Computer Aided Geometric Design*, Springer-Verlag, New York.

Zucker, S.W., and Hummel, R.A. (1981), A Three-Dimensional Edge Operator, *IEEE Transactions on Pattern Recognition and Machine Intelligence*, Vol. **PAMI-3**, No. **3**, pp. 324–331.