Curriculum Vitae

Leila De Floriani

(April 2022)

Education

- Laurea Degree in Mathematics, University of Genova, 1977.
- Postgraduate Fellow, Applied Mathematics, 1978 –1981, Italian National Research Council

Employment

- **Assistant Professor** of Computer Science, University of Genova (1981).
- **Visiting Associate Professor**, Computer Science Department, University of Nebraska, Lincoln, NE (USA) (summer 1982).
- **Senior Scientist**, Institute for Applied Mathematics (IMA) of the Italian National Research Council (CNR), Genova (1982 –1990).
- **Visiting Scientist**, Rensselaer Polytechnic Institute, Albany, NY (USA) (visits of several months during years 1985 – 1989).
- **Adjunct Professor** of Computer Science, University of Genova (1987-1990).
- **Full Professor** of Computer Science at the University of Genova, and founder of the Geometric Modeling and Computer Graphics Group (1990–2016).
- **Visiting Professor**, University of Maryland Institute for Advanced Computer Studies (UMIACS) College Park (October 1998–February 1999).
- **Visiting Professor**, Department of Computer Science of the University of Maryland College Park (2002).
- **Visiting Professor** at the University of Novisad (Serbia), Faculty of Engineering, (2013).
- **Adjunct Professor**, Department of Computer Science, University of Maryland at College Park (2013–2016).

- **Visiting Professor** at the University of Maryland Institute for Advanced Computer Studies (UMIACS) (2013–2016).
- **Full Professor**, University of Maryland at College Park, Department of Geographical Sciences and UMIACS (2016–)
- **Affiliate Full Professor**, University of Maryland at College Park, Department of Computer Science (2016–)
- **Affiliate Full Professor**, University of Maryland at College Park, Center for Geospatial Information Science (2016–)
- **Affiliate Full Professor**, University of Maryland at College Park, Center for Automation Research (2016–)

Research

- **Major contributions**
  - Hierarchical models for graph representation and analysis.
  - Numerical techniques for wave simulation in shallow water.
  - Mesh-based multi-resolution modeling of 3D shapes.
  - Level-of-detail modeling and visualization of 3D scalar fields.
  - Hierarchical terrain models for terrain processing and visualization.
  - Algorithms for visibility computation on triangulated terrain models.
  - Form feature recognition for product design and manufacturing.
  - Spatial and combinatorial data structures for simplicial meshes,
  - Topological shape modeling and visualization based on discrete Morse theory.
- **Current interests**
  - Data visualization
  - Topology-based visualization
  - Topological data analysis
  - Spatial data analysis
  - Spatial data structures
  - Terrain modeling and analysis

Awards and Recognitions

- **Fellow**, *IEEE*, for contributions to geometric modeling and scientific visualization, 2016.

- **Fellow**, *International Association for Pattern Recognition (IAPR)*, for contributions to geometric modeling and image analysis,1998.
- **Fellow**, *Eurographics Association*, for outstanding contributions, leadership and service to the fields of Computer Graphics, Visualization and to the Eurographics Association in particular, and for foundational contribution to starting up one of the most vital research communities in Geometry and Graphics in Italy, 2020.
- **Inducted Member**, *IEEE Visualization Academy*, 2020.
- **Solid Modeling Pioneer Award**, *Solid Modeling Association*, for seminal work in solid and feature-based modeling, 2017.
- **Golden Core Award**, *IEEE Computer Society*, 2017.
- **Inducted Member**, *IEEE Honor Society Eta Kappa Nu*, for excellence in education and meritorious work in geometric modeling and scientific visualization, 2019.
- **Certificate of Appreciation**, *IEEE Computer Society*, in recognition of the service to the Computer Society, 2019.

Editorial and Conference Activities

- **Editor-in-Chief**, *IEEE Transactions on Visualization and Computer Graphics*, January 1st, 2015 - December 31st, 2018.
- **Membership** in editorial boards of international journals:
  - **Associate Editor** of *ACM Transactions on Spatial Algorithms and Systems* (2013–).
  - **Associate Editor** of *Graphical Models*, Elsevier (2010–).
  - **Associate Editor** of *Computers and Graphics*, Elsevier (2020–).
  - **Associate Editor** of *IEEE Transactions on Visualization and Computer Graphics* (2004–2008).
  - **Member of the Editorial Board** of *Computer Science Reviews* (2021–).
  - **Member of the Editorial Board** of *GeoInformatica* (2004–).
  - **Member of the Editorial Board** of *International Journal of Spatial Information Science* (2014–).
  - **Member of the Editorial Board** of *International Journal of Geo-Information* (2019–).
  - **Member of the Editorial Board** of *Computer-Aided Design* (1990-1996).
  - **Member of the Editorial Board** of the *International of Journal of Geographic Information Systems* (1988-1998).
- **Member of Program Committees** of more than 150 international conferences, symposia, and workshops (see list in the last section of this document).

- **General Co-Chair**, COMPSAC 2022, Torino, 2022.

  General Co-Chair, Computational Visual Media Conference, Macao, 2020.

- **Member**, Steering Committee,TopoinVIs, since 2022.

- **Member**, Steering Committee, IEEE Returning Mothers Conference, since 2021.

- **Chair**, Best Paper Committee, IEEE Visualization 2019.

- **Member**, Steering Committee, International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data, since 2019.

- **Member**, Steering Committee, EnvirVis - Visualization in Environmental Sciences Workshop, since 2016.

- **Co-Chair**, Italy/Israel Symposium on Shape Modeling and Reasoning for Industrial and Biomedical Applications, Haifa, May 2007.

- **General Co-Chair**, Eighth ICIAP (International Conference on Image Analysis and Processing), Sanremo (Italy), September 1995.

- **Co-Chair**, Symposia on Computer Vision (Kyriat Anavim (Israel), 1991; Capri (Italy), 1992).

- **Track Chair**, ICIAP (International Conference on Image Analysis and Processing), Genova, 2015.

- **Organizer** of training schools for young researchers: Machine Vision (Genova, 2012); Homology: Theoretical and Computational Issues (Genova, 2015); Shape modeling (Genova, 2004).

Professional Service

- **2022 Division VIII Director-Elect**, IEEE.

- **2023-24 IEEE Division VIII Director**, IEEE.

- **2020 President**, IEEE Computer Society, and **Chair**, IEEE Computer Society Board of Governors

- **2021 Past President**, IEEE Computer Society.

- **2019 President Elect**, IEEE Computer Society.

- **Member**, Board of Directors, Computing Research Association, 2020–present.

- **Member**, Visualization Academy Committee, 2021-2022

- **Founding Chair**, IEEE Computer Society Diversity and Inclusion Committee, 2021.

- **Chair**, IEEE Computer Society Intersociety Cooperation Committee, 2021.

- **Chair**, IEEE Computer Society Nominations Committee, 2021.
- **Chair**, IEEE Computer Society Diversity and Inclusion Task Force, 2020.
- **Chair**, IEEE Computer Society Planning Committee, 2019.
- **Chair**, Computer Society Constitution and Bylaws Committee, 2019.
- **Chair**, IEEE Computer Society Audit Committee, 2018.
- **Member**, IEEE Computer Society Board of Governors, since 2017.
- **Member**, IEEE Computer Society Executive Committee, since 2019.
- **Vice-Chair**, IEEE Computer Society Fellow Evaluation Committee, 2017 and 2018.
- **Member**, IEEE Conferences Committee, 2021-2023.
- **Member**, IEEE Conference Publications Committee, 2021.
- **Member** IEEE Conference Diversity Best Practices Ad-Hoc Committee, 2021.
- **Member** IEEE Conference Open Access Ad-Hoc Committee, 2021.
- **Member**, IEEE Technical Activity Board, 2020.
- **Member**, IEEE USA Research and Development Policy Committee, 2019.
- **Member**, IEEE Computer Society Intersociety Cooperation Committee, 2019 and 2020.
- **Member**, IEEE Computer Society Finance Committee since 2019.
- **Member**, IEEE Computer Society Nominations Committee, 2019.
- **Member**, IEEE Computer Society Constitution and Bylaws Committee, 2018.
- **Member**, IEEE Computer Society Audit Committee, 2017.
- **Member**, IEEE Computer Society Fellow Evaluation Committee, 2016.
- **Member**, IEEE Computer Society Transactions Operations Committee, 2015-2018.
- **Member**, Executive Committee of the IEEE Computer Society Visualization and Graphics Technical Committee (VGTC), 2015-2018.
- **Grant reviewer**, European Commission (specifically, FET and ERC projects), Swiss National Science Foundation, Italian Ministry of Education, University and Research, Italian National Research Council, National Science Foundation, DFG (German Science Foundation), FFG (Austrian Research Promotion Agency).

University Service

- **Service at the University of Maryland**
  - **Graduate Director**, PhD Program in Geographical Sciences, 2021–present.
  - **Member**, College Council, BSOS, 2021–present.
  - **Member**, Graduate Council, UMD Graduate School, 2022–present.
  - **APT Chair**, Department of Geographical Sciences, 2018.
  - **APT Committee Member**, UMIACS, 2018-2019.
  - **APT SubCommittee Chair**, Department of Geographical Sciences, 2020.
  - **Graduate Committee Member**, Department of Geographical Sciences, 2019-present.
  - **Graduate Committee Chair**, Department of Geographical Sciences, 2017-2018.
  - **Graduate Committee Chair**, Department of Geographical Sciences, Spring 2019.
  - **Graduate Committee Member**, Department of Geographical Sciences, 2016-2017.
  - **Junior Faculty Search Committee**, Department of Geographical Sciences, 2016-2017.
  - **Junior Faculty Search Committee**, Department of Geographical Sciences, 2017-2018.
  - **Junior Faculty Search Committee**, Department of Geographical Sciences, 2018-2019.
  - **Capital One Faculty Search Committee**, Department of Computer Science, 2018-2019.
  - **Junior Faculty Search Committee**, Department of Computer Science, 2018-2019.
  - **Member** of over 20 PhD committees, Departments of Computer Science and Geographical Sciences.
- **Service at the University of Genova**
  - **Director**, Graduate Program of Studies in Computer Science and System Engineering (2013-2016).
  - **Chair**, Admission Committees for PhD students in Computer Science (1996-2002).
  - **Chair** of four committees for appointment of associate professors at the University of Genova (2014-2016).
  - **Vice Chair**, Department of Computer and Information Sciences (DISI) (1992–1999).
  - **Chair**, Department of Computer and Information Sciences (DISI)Resource Allocation Committee (1992–1999).

- **Member**, PhD Thesis Committees for over 30 PhD students in Computer Science.
- **Member of Master Thesis Committees** for over 100 Master students in Computer Science and Mathematics.

- **Service for the Italian Academic Community**
  - **Member**, Advisory Board of the National Research Group for Computer Science (GNIM) of the Italian National Research Council, 1998–2000.
  - **Member**, Italian National Committee for the Research in Computer Science (1999–2000).
  - **Member**, Italian National Committee for evaluation of undergraduate programs in Computer Science (1996).
  - **Member**, National Tenure Committee for Associate and Assistant Professors (1998, 2000 and 2001).
  - **Member** of over 10 committees for appointments of professors at all ranks in Computer Science in various Italian universities (1994-2000).
  - **Member** of four committees for appointments at the Italian National Research Council (1995-2001).
  - **Member** of PhD committees in Computer Science at the University of Pisa, Bari and Rome (1998-2001)

Publications

Journal Papers

1. N.Dyer, C.Kastrisios, L. De Floriani, Label-based generalization of bathymetry data for hydrographic sounding selection, *Cartography and Geographic Information Science*, January 2022.

2. G.Liu, R. Fellegara, F. Iuricich , L. De Floriani, TopoCluster: A Localized Data Structure for Topology-based Visualization, *IEEE Transactions on Visualization and Computer Graphics*, 2021 (in print).

3. R. Fellegara, K. Weiss, L. De Floriani, The Stellar Tree: a Compact Representation for Simplicial Complexes and Beyond, *Computers & Graphics*, 98, 322-343, 2021.

4. L.De Floriani, 2020: A Year of Transformative Change and Conquering Adversity, *IEEE Computer*, 54, 2, 2021.

5. R. Fellegara, L.De Floriani, P. Magillo, K. Weiss, Tetrahedral Trees: A Family of Hierarchical Spatial Indexes for Tetrahedral Meshes. *ACM Trans. Spatial Algorithms and Systems*. 6, 4, 2020.

6. S. Scaramuccia, F. Iuricich, L. De Floriani, C.Landi, Computing Multiparameter Persistent Homology through a Discrete Morse-based Approach, *Computational Geometry: Theory and Applications*, 89, August 2020.

7. L.De Floriani, 2020: A Journey of Discovery, Challenges, and Opportunity,*IEEE Computer*, 53, 9, 2020.

8. R. Fellegara, F. Iuricich, L. De Floriani, U. Fugacci, Efficient homology-preserving simplification of high-dimensional simplicial shapes, *Computer Graphics Forum*, 39, 1, February 2020.

9. U. Fugacci, F. Iuricich, L. De Floriani, Computing discrete Morse complexes on simplicial complexes, *Graphical Models*,109, 2019.

10. F. Iuricich, L. De Floriani, Hierarchical Forman Triangulation: a Multiscale Model for Scalar Field Analysis, *Computers & Graphics*, 66, 113–123, 2017.

11. L. Comic, L. De Floriani, F. Iuricich, P.Magillo: Computing a Discrete Morse Gradient from a Watershed Decomposition, *Computers & Graphics* 58: 43-52, 2016.

12. C. Heine, H. Leitte, M. Hlawitschka, F. Iuricich, L. De Floriani, G. Scheuermann, H. Hagen, C. Garth, A Survey of Topology-based Methods in Visualization. *Computer Graphics Forum*, 35(3): 643-667, 2016.

13. L. De Floriani, U. Fugacci, F. Iuricich, P. Magillo, Morse Complexes for Shape Segmentation and Homological Analysis: Discrete Models and Algorithms, *Computer Graphics Forum* 34(2), 761-785, 2015.

14. F. Iuricich, U. Fugacci, L. De Floriani, Topologically-consistent Simplification of Discrete Morse Complexes, *Computers & Graphics*, 34:157-166, 2015.

15. P. D. Simari, G. Picciau, L. De Floriani, Fast and Scalable Mesh Superfacets, *Comput. Graph. Forum*, 33(7), 181-190, 2014.

16. L. Comic, L. De Floriani, F. Iuricich, U. Fugacci, Topological Modifications and Hierarchical Representation of Cell Complexes in Arbitrary Dimensions, *Computer Vision and Image Understanding*, 121, 2-12, 2014.

17. P. D. Simari, L. De Floriani, F. Iuricich, M. M. Mesmoudi, Generalized Extrinsic Distortion and Applications, *Computers & Graphics*, 37(6), 582-588, 2013.

18. K. Weiss, F. Iuricich, R. Fellegara, L. De Floriani: A Primal/Dual Representation for Discrete Morse Complexes on Tetrahedral Meshes, *Computer Graph. Forum*, 32(3), 361-370, 2013.

19. L. Comic, L. De Floriani, F. Iuricich, Dimension-independent Multi-resolution Morse complexes, *Computers & Graphics*, 36(5), 541-547, 2012.

20. L. Comic, L. De Floriani, Dimension-independent Simplification and Refinement of Morse Complexes, *Graphical Models*, 73, 5, 261-285, September 2011.

21. D. Boltcheva, D. Canino, S. Merino Aceituno, J.C. Leon, L. De Floriani, F. Hetroy, An Iterative Algorithm for Homology Computation on Simplicial Shapes, *Computer Aided Design*, 43, 11, 1457-1467, 2011.

22. D. Canino, L. De Floriani, K. Weiss, IA*: An Adjacency-based Representation for Non-Manifold Simplicial Shapes in Arbitrary Dimensions, *Computers & Graphics*, 35, 3, 747-753, 2011.

23. K. Weiss, L. De Floriani, Simplex and Diamond Hierarchies: Models and Applications, *Comput. Graph. Forum*, 30, 8, 2127-2155, 2011.

24. K. Weiss, L. De Floriani, Isodiamond Hierarchies: An Efficient Multiresolution Representation for Isosurfaces and Interval Volumes. *IEEE Transactions on Visualization and Computer Graphics*, 16(3), 2010.

25. K. Weiss, L. De Floriani. Supercubes: A High-Level Primitive for Diamond Hierarchies, *IEEE Transactions on Visualization and Computer Graphics*, 15(6), Nov-Dec 2009.

26. K. Weiss, L. De Floriani, Diamond Hierarchies of Arbitrary Dimension, *Computer Graphics Forum*, 28(5), 1289-1300, 2009.

27. S. Biasotti, L. De Floriani, B. Falcidieno, P. Frosini, D. Giorgi, C. Landi, L. Papaleo, M. Spagnuolo, Describing Shapes by Geometrical-topological Properties of Real Functions. *ACM Computing Surveys*, 40, 4, 1-87, 2008.

28. M.M. Mesmoudi, L.De Floriani, U. Port, Discrete Distortion in Triangulated 3-Manifolds, *Computer Graphics Forum*, 27 (5), 1333-40, 2008.

29. E. Danovaro, L. De Floriani, P. Magillo, E. Puppo, D. Sobrero, Level-Of-Detail for Data Analysis and Exploration: A Historical Overview and Some New Perspectives, *Computers & Graphics*, 30, 3, 334-344, 2006.

30. L. De Floriani, A. Hui, A Dimension-Independent Representation for Multi-Resolution Non-Manifold Meshes, *Journal of Computing and Information Science in Engineering*, 6, 12, 2006.

31. P. Cignoni, L. De Floriani, P. Magillo, E. Puppo, R. Scopigno, Selective Refinement Queries for Volume Visualization of Unstructured Tetrahedral Meshes, *IEEE Transactions on Visualization and Computer Graphics*, 10(1), 29-45, 2004.

32. L. De Floriani, P. Magillo, E. Puppo, D. Sobrero, A Multi-Resolution Topological Representation for Non-manifold Meshes, *Computer-Aided Design Journal*, 36(2), 141-159, 2004.

33. L. De Floriani, M.M. Mesmoudi, F. Morando, E. Puppo, Non-manifold Decompositions in Arbitrary Dimensions, *CVGIP: Graphical Models*, 65/1-3, Elsevier, 2-22, 2003.

34. L. De Floriani, P. Magillo, E. Puppo, Compressing Triangulated Irregular Networks, *GeoInformatica*, 4, 1, 67-88, 2000.

35. L. De Floriani, P. Magillo, F. Morando, E. Puppo, Dynamic View-Dependent Multiresolution on a Client-Server Architecture, *Computer Aided Design*, 32, 13, 805-823, 2000.

36. L. De Floriani, P. Magillo, E. Puppo, VARIANT: A System for Terrain Modeling at Variable Resolution, *GeoInformatica*, 4, 3, 287-315, 2000.

37. L. De Floriani, P. Magillo, Visibility Computations on Hierarchical Triangulated Terrain Models, *GeoInformatica*, 1, 3, 219-250, 1997.

38. M. Bertolotto, E. Bruzzone, L. De Floriani, G. Nagy, Generating Assembly and Machining Sequences from the Face-to-Face Composition Model, *Computer Aided Design*, 28, 2, 101-112, 1996.

39. L. De Floriani, P. Magillo, Representing the Visibility Structure of a Terrain through a Nested Horizon Map, *International Journal of Geographical Information Systems*, 10, 5, 541-562, 1996.

40. L. De Floriani, P. Marzano, E. Puppo, Multiresolution Models for Topographic Surface Description, *The Visual Computer (International Journal of Computer Graphics)*, 12, 7, 317-345, 1996.

41. L. De Floriani, P. Magillo, Horizon Computation on a Hierarchical Triangulated Terrain Model, *The Visual Computer (International Journal of Computer Graphics)*, 11, 3, 134-149, 1995.

42. L. De Floriani, E. Puppo, Hierarchical Triangulation for Multiresolution Surface Description, *ACM Transactions on Graphics*, 14, 4, 363-411, 1995.

43. L. De Floriani, P. Magillo, Visibility Algorithms on Triangulated Digital Terrain Models, *International Journal of Geographic Information Systems*, 8, 1, 13-41, 1994.

44. L. De Floriani, P. Marzano, E. Puppo, Line-of-sight Communication on Terrain Models, *International Journal of Geographic Information Systems*, 8, 4, 329-342, 1994.

45. L. De Floriani, C. Montani, R. Scopigno, Parallelizing Visibility Computations on Triangulated Terrains, *International Journal of Geographic Information Systems*, 8, 6, 515-532, 1994.

46. L. De Floriani, D. Mirra, E. Puppo, Extracting Contour Lines from a Hierarchical Surface Model, *Computer Graphics Forum*, Blackwell, Cambridge, MA (USA), 12, 3, (also in *Proceedings Eurographics'93*, Barcelona, Spain, September 1993), 249-260, 1993.

47. L. De Floriani, P. Jeanne, G. Nagy, Visibility-related Image Features, *Pattern Recognition Letters*, 13, 463-470, 1992.

48. L. De Floriani, E. Puppo, An On-line Algorithm for Constrained Delaunay Triangulation, *CVGIP: Graphical Models and Image Processing*, 54, 4, 290-300, 1992.

49. E. Bruzzone, L. De Floriani, Extracting Adjacency Relations from a Modular Boundary Model, *Computer Aided Design*, 23, 5, 344-356, 1991.

50. L. De Floriani, B. Falcidieno, G. Nagy, C. Pienovi, On Sorting Triangles in a Delaunay Tessellation, *Algoritmica*, 6, 4, 522-532, 1991.

51. M. Ancona, E. Bruzzone, L. De Floriani, Using Structured Steiner Trees for Hierarchical Global Routing, *International Journal of Computer Mathematics*, 40, 1, 1991.

52. M.Ancona, A.Clematis, L. De Floriani, E.Puppo, HIDEL: a Language for Hierarchical VLSI Design, *The Computer Journal*, 34, 3, 195-206, 1991.

53. M. Ancona, L. De Floriani, J.S. Deogun, Structured Spanning Trees, *The Computer Journal*, 33, 4, 344-355, 1990.

54. E. Bruzzone, L. De Floriani, Two Data Structures for Constructing Tetrahedralizations, *The Visual Computer (International Journal of Computer Graphics)*, 6, 5, 266-283, 1990.

55. L. De Floriani, B.Falcidieno, C.Pienovi, Structured Graph Representation of a Hierarchical Surface Model, *Computer Vision, Graphics and Image Processing*, 45, 2, 215-226, February 1989.

56. L. De Floriani, A Pyramidal Data Structure for Triangle-based Surface Description, *IEEE Computer Graphics and Applications*, 9, 2, 67-78, March 1989.

57. L. De Floriani, Feature Extraction from Boundary Models of Solid Objects, *IEEE Pattern Analysis and Machine Intelligence*, 11, 9, 785-798, August 1989.

58. E. Bruzzone, L. De Floriani, Building a Feature-based Object Description from a Boundary Model, *Computer-Aided Design*, 21,10, 602-610, December 1989.

59. L. De Floriani, B.Falcidieno, A Hierarchical Boundary Model for Solid Object Representation, *ACM Transactions on Graphics*, 7, 1, 42-60, January 1988.

60. M. Ancona, L. De Floriani, Arc-Structured Networks, *AMSE Review*, 7, 1, 5-38, 1988.

61. L. De Floriani, A Variable Resolution Graph-Based Model of Three-Dimensional Objects, *Advances in Engineering Software*, 10, 3, 143-158, 1988.

62. M. Ancona, L. De Floriani, A Hypergraph-based Hierarchical Structure and Its Applications, *Advances in Engineering Software*, 11,1, 2-11, 1988.

63. M. Ancona, A. Clematis, L. De Floriani, E.Puppo, A Hardware Description Language Based on a Hierarchical Graph Model, *Microprocessing and Microprogramming - The Euromicro Journal*, 20 , 183-188, 1987.

64. L. De Floriani, Data Structures for Encoding Triangulated Irregular Networks, *Advances in Engineering Software*, 9, 3, 1987.

65. L. De Floriani, Surface Representations Based on Triangular Grids, *The Visual Computer (International Journal of Computer Graphics)*, 3, 1, 27-50, 1987.

66. L. De Floriani, G. Dettori, Data Structures for Computer Graphics, *AMSE Review*, 3, 2, 33-55, 1986.

67. M. Ancona, L. De Floriani, J. S. Deogun, Path Problems in Structured Graphs, *The Computer Journal*, 29, 6, 553-563, 1986.

68. S. Ansaldi, L. De Floriani, B. Falcidieno, An Edge-Face Relational Scheme for Boundary Representations, *Computer Graphics Forum*, 4, 4, 319-332, 1985.

69. L. De Floriani, G. Dettori, An Interpolant with Tension Defined over Triangles, *Computer Graphics Forum*, 4, 4, 359-362, 1985.

70. L. De Floriani, B.Falcidieno, C. Pienovi, Delaunay-based Representation of Surfaces Defined over Arbitrarily Shaped Domains, *Computer Vision, Graphics and Image Processing*, 32, 127-140, 1985.

71. S. Ansaldi, L. De Floriani, B. Falcidieno, Geometric Modeling of Solid Objects by Using a Face Adjacency Graph Representation, *Computer Graphics*, 19, 3, 131-139, 1985 (also *Proceedings 1985 SIGGRAPH Conference*, San Francisco (USA), July 1985).

72. L. De Floriani, B. Falcidieno, G. Nagy, C. Pienovi, Efficient Selection, Storage and Retrieval of Irregularly Distributed Elevation Data, *Computers and Geosciences*, 11, 6, 667-673, 1985.

73. L. De Floriani, B. Falcidieno, G. Nagy, C. Pienovi, A Hierarchical Structure for Surface Approximation, *Computers & Graphics*, 8, 2, 183-193, 1984.

74. M. Ancona, L. De Floriani, G. Dodero, S. Mancosu, Integrating Library Modules into Pascal Programs, *Software Practice and Experience*, 14, 5, 401-412, 1984 (shorter version in *Proceedings Sixth International Conference on Software Engineering*, IEEE Computer Society Press, Washington DC (USA), Tokyo, September 1982).

75. L. De Floriani, L. Papa, A Study of Wave Refraction in the Northern Ligurian Sea, *Advances in Water Resources*, 6, 121-123, 1983.

76. L. De Floriani, A Minicomputer System for the Study of Wave Refraction, *Advances in Engineering Software*, 4, 4, 152-155, 1982.

77. M. Ancona, L. De Floriani, Computational Algorithms for Hierarchically Structured Project Networks, *Operations Research Letters*, 1, 4, 170-176, 1982.

78. L. De Floriani, G. Dettori, B. Falcidieno,V. Gianuzzi, C. Pienovi, A Graphical System for Geographical Data Processing in a Minicomputer Environment, *Signal Processing*, 3, 253-257, 1981.

79. L. De Floriani, G. Dettori, An Interpolation Method for Surfaces with Tension, *Advances in Engineering Software*, 3, 4, 1981 (also in *Engineering Software* II, R.A.Adey (editor), 1981).

Conference Papers

1. Y.Song, R. Fellegara, F. Iuricich , L. De Floriani, Efficient topology-aware simplification of large triangulated terrains, *Proceedings 29th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, November 2021.

2. X. Xu, F. Iuricich , L. De Floriani, A Persistence-Based Approach for Individual Tree Mapping, *Proceedings 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, November 2020.

3. H. Wei, R. Fellegara, L. De Floriani, H. Samet, Multi-Level Filtering to Retrieve Similar Trajectories under the Frechet Distance, *Proceedings 26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, November 2018.

4. R. Fellegara, F. Iuricich, L. De Floriani, Efficient Representation and Analysis of Triangulated Terrains, *Proceedings 25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, 74:1–74:4, 2017.

5. R. Fellegara, U. Fugacci, F. Iuricich, L. De Floriani, Analysis of Geolocalized Social Networks Based on Simplicial Complexes. *Proceedings 9th ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LSBN)*, 2016.

6. F. Iuricich, S. Scaramuccia, C. Landi, L. De Floriani, A Discrete Morse-based Approach to Multivariate Data Analysis, *Proceedings of ACM SIGGRAPH ASIA Symposium on Visualization*, Macau, December 6-7, 2016.

7. G. Picciau, P. Simari, F. Iuricich, L. De Floriani, Supertetras: a Superpixel Analog for Tetrahedral Mesh Oversegmentation *Proceedings 18th International Conference on Image Analysis and Processing*, Genova (Italy).September 7-11, 2015.

8. F.Iuricich, L. De Floriani, A Combined Geometrical and Topological Hierarchy for Terrain Analysis, *Proceedings 22nd SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Dallas, TX, USA, November 5-8, 2014.

9. R. Fellegara, F.Iuricich, L. De Floriani, K. Weiss, Efficient Computation and Simplification of Discrete Morse Decompositions on Triangulated Terrains, *Proceedings 22nd SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Dallas, TX, USA, November 5-8, 2014

10. U. Fugacci, F. Iuricich, L. De Floriani: Efficient Computation of Simplicial Homology through Acyclic Matching, *Proceedings 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2014)*, Timisoara, Romania, September 22-25, 587–593, 2014.

11. D. Canino, L. De Floriani: A Compact Representation for Topological Decompositions of Non-manifold Shapes, *Proceedings 8th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (GRAPP 2013)*, February 21-24 2013, Barcelona, 100-107.

12. L. Comic, L. De Floriani, F. Iuricich, Multi-resolution Cell Complexes Based on Homology-Preserving Euler Operators, Gonzalez-Diaz, R., Jimenez, M.-J. and Medrano, B. (Eds.), *Discrete Geometry for Computer Imagery*, Springer Berlin Heidelberg, 2013, 7749, 323-334.

13. L. De Floriani, F. Iuricich, P. Magillo, P. D. Simari, Discrete Morse versus Watershed Decompositions of Tessellated Manifolds. *Proceedings Image Analysis and Processing - ICIAP 2013 - 17th International Conference*, Naples, Italy, September 9-13, 2013, 339-348.

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- L. De Floriani, Using 2D Maps for 3D Localization, *IEEE Computer*, 49, 3, 2016.
- L. De Floriani, A High-level Language for Interactive Data Visualization, *IEEE Computer*, 50, 4, 2017.
- L. De Floriani, Globe Browsing in OpenSpace, *IEEE Computer*, 51,5, 2018.

Patents

- DELTRI: a code for computing a TIN (Triangulated Irregular Network) based on Delaunay triangulation (with B.Falcidieno and C.Pienovi), 1984.
- CONTRI: a code for contour line extraction from a TIN (with B.Falcidieno and C.Pienovi), 1984

Keynotes and Invited Talks (selected)

- Topology-based tools for shape analysis and visualization, *Keynote Talk* European Conference on Computational Geometry, March 2022.
- Inaugural Panel on Diversity and Inclusion, Women in Engineering, IEEE Returning Mothers Conference, August 2021.
- Presidents Panel, IEEE COMPSAC 2021, July 2021.
- Mesh-based approached to modeling point clouds for geospatial applications, IEEE Computer Society Japan Chapter, December 2020.
- Diversity and Inclusion Activities in the IEEE Computer Society, IEEE Women in Engineering International Leadership Summit, December 2020.
- Topology-based approaches to data visualization, IEEE Global Summit 2020, November 2020.
- Topology-based clustering methods for geospatial data analysis,IEEE Hyderabad Section, August 2020.
- Topology-based approaches to data analysis, IEEE YESIST12 , August 2020.
- Topology-based approaches for big geospatial data analysis, *Keynote Talk*, 2019 International Workshop on Geocomputation for Social Sciences and Intelligent Geospatial Information Service, Wuhan University, July 2019.

- Representations and topology-based approaches for point-based terrain modeling, Melbourne University, March 2019.
- Data representation and topology-based methods for visualization, Dagstuhl Seminar on "Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods", October 14- 18, 2018.
- New trends in data visualization, ChinaVis, 2018.
- Topology-based approaches for scientific data visualization, *Keynote Talk* International Symposium CompIMAGE, 2018.
- Topological data analysis and topology-based visualization, Dagstuhl Seminar on "Foundation of visualization", January 2018.
- Topology-based approaches to geospatial data analysis and visualization, University of Genova, March 2018.
- A Morse-based approach to multivariate data analysis and multipersistent homology, Dagstuhl Seminar on "Topology, Computation and Data Analysis", July 2017.
- A hierarchical approach to topological data analysis and visualization, Dagstuhl Seminar on "Scientific Visualization", June 2014.
- Efficient computation and hierarchical representation of discrete Morse complexes, Dagstuhl Seminar on "New perspectives for shape analysis", February 2014.
- Effective and efficient representations for shape modeling, *Keynote Talk*, Eurographics 2012, May 2012.
- Modeling Morse Complexes, Lawrence Livermore Labs, February 2012.
- Simplex, diamond and hypercube hierarchies in arbitrary dimensions, Dagstuhl Seminar on "Scientific Visualization", June 2011.
- Representing non-manifold simplicial shapes in arbitrary dimensions, Dagstuhl Seminar on "Geometric Modeling", May 2011.
- Modeling Morse complexes in arbitrary dimensions, Dagstuhl Seminar on "Innovation for shape analysis: models and algorithms", April 2011.
- Generalization of Morse Complexes in arbitrary dimensions, Dagstuhl Seminar on "Generalization of spatial information", April 2009.
- Multiresolution modeling of isosurfaces and interval volumes through isodiamond hierarchies, Dagstuhl Seminar on "Scientific Visualization", June 2009.
- Modeling non-manifold shapes, Lawrence Livermore Labs, February 2007.
- Shape modeling and visualization, Dagstuhl Seminar on "Scientific Visualization", July 2007.

- Multi-resolution Modeling of multidimensional scalar fields, Dagstuhl Seminar on "Spatial Data : Mining, Processing and Communicating", March 2006.
- Efficient Representation of Simplicial Meshes, Dagstuhl Seminar on "Scientific Visualization: Challenges for the Future", June 2005.
- Representing Non-Manifold Shapes in Arbitrary Dimensions, Israel-Korean Bi-national Conference on New Technologies and Visualization Methods for Product Development on Design and Reverse Engineering, Haifa, November 7-9, 2005.
- Modeling non-manifold shapes, CSCAMM, University of Maryland, November 30, 2005.
- Modeling non-manifold and multi-resolution multi-dimensional shapes, Rutgers University, Department of Electrical Engineering Colloquium, February 1, 2005.
- Generating, Representing and Querying Level-of-Detail Tetrahedral Meshes, Dagstuhl Seminar on "Scientific Visualization: Extracting Information and Knowledge from Scientific Data Sets", June 2003.
- Compact Vertex-Based Multi-resolution Simplicial Complexes, Dagstuhl Seminar on "Digital and Image Geometry", December 2001.
- Data Structures for 3D Multi-Tessellations: An Overview, Dagstuhl Seminar on "Scientific Visualization", May 2000.
- Multi-resolution Representation of Shapes Based on Cell Complexes, Discrete Geometry for Computer Imagery (DGCI 1999), 1999.
- **Invited talks** at several Universities and academic institutions, including: Rensselear Polytechnic Institute, University Of Maryland, University of California at Irvine, Rutgers University, University of Nebraska, ETH (Zurich), INRIA (Sophia Antipolis), University of Rome, Milan, Pavia, Verona, Palermo, Venice and Institutes of the Italian National Research Council (Rome, Pisa, Naples)

Tutorials

- Topology-based visualization, Doctoral Data Visualization School, Peking University, 2019.
- Data visualization, Department of Computer Science, University of Genova, 2017.
- How to write a scientific paper, Department of Computer Science, University of Genova, 2017.
- Computational topology tools for data analysis, VISMAC Summer School, June 2014.
- Efficient and effective data structures for shape modeling and analysis, SGP 2013 (with K. Weiss and P. Lindstrom).

- Simplex and Diamond Hierarchies: Models and Applications, Eurographics 2010 (with K. Weiss).
- Mesh-based shape representation, International Summer School on Shape Modeling and Reasoning, Genova, June 2007 (with E. Puppo).
- Shape Representations based on Cell and Simplicial Complexes, Eurographics 2007.
- Modeling non-manifold meshes through simplicial shapes, AIM@SHAPE International Summer School, 2006.
- Representations for simplicial meshes, International School on Shape Modeling, Genova (Italy), June 2004.
- Multi-resolution modeling, visualization and streaming of volumetric data, *Tutorial* Eurographics 2004 (with P.Cignoni, P. Lindstrom, V. Pascucci, J. Rossignac, and C.Silva), September 2004.
- Multi-resolution modeling, visualization and compression of volumetric data, *Tutorial* IEEE Visualization 2003 (with P.Cignoni, V. Pascucci, J. Rossignac, and C.Silva), October 2003.
- Multi-resolution Hierarchies and View-dependent Rendering of Polygonal; Data Sets, Eurographics 2002 (with J.ElSana, E. Puppo and A.Shamir), September 2002.
- Multi-resolution Mesh Representation: Models and Data Structures", European Post-Doctoral School on Multi-resolution Geometric Modeling (with P.Magillo), August 2001.
- Multi-resolution Modeling, Eurographics'99 (with E. Puppo and P.Cignoni), September 1999.
- Multi-resolution Terrain Modeling, Sixth International Symposium on Large Spatial Data Bases (with E.Puppo), July 1999.
- Mesh Simplification and Multi-resolution Modeling, IEEE Visualization 1998 (with E. Puppo and R. Scopigno), October 1998.
- Geometric Modeling, School on Computer Vision, IAPR (International Association for Pattern Recognition), Udine (Italy), 1996.
- Geometric Modeling, School on Computer Vision, IAPR (International Association for Pattern Recognition), Rome(Italy), 1994.
- Data Structures for GIS, International Conference on Spatial Information Theory, Pisa (Italy), September 1992.
- Solid Modeling, Computer Graphics International '91, Boston, USA, June 1991.

Teaching

Teaching at the University of Maryland

- **Courses taught**
  - GEOG 498G /CMSC 498I/ GEOG 788I: Algorithms for Geospatial Computing (approved as GEOG 470/ 770 in December 2020 and as CMSC 401 in January 2022).
  - CMSC 420: Data Structures.

Teaching at the University of Genova

- **Courses taught**
  - Introduction to algorithms and data structures for Computer Science majors.
  - Introduction to programming for Math majors.
  - Algorithms and data structures for Math majors.
  - Advanced algorithms and data structures for Computer Science majors.
  - Human-Computer Interaction for Computer Science majors.
  - Geometric modeling for Master students in Computer Science and Mathematics.
  - Computational geometry for Master students in Computer Science and Mathematics.
  - Computer graphics for Master students in Computer Science and Mathematics.
- **New courses developed**
  - Algorithms and data structures, for Math majors.
  - Advanced algorithms and data structures, for Computer Science majors.
  - Computational geometry, for Computer Science Master students.
  - Computer graphics, for Computer Science Master students.
  - Geometric modeling, for Computer Science and Math Master students.

  For each course: design of the scope and syllabus and preparation of teaching material (course notes, slides, homework assignments and projects).

Invited PhD Courses (selected)

- PhD Course on "Topological Data Analysis and Visualization", University of Genova, summer 2016 and 2017 (20 hours)

- PhD Course on "Technical paper writing", University of Genova, summer 2017 (10 hours) PhD Course on "Multi-resolution Geometric Modeling", International School for PhD students in Computer Science, Bertinoro (Italy), March 2003.
- PhD Course on "Advanced Computer Graphics" at the International School for PhD students, International School for PhD students in Computer Science, Bertinoro (Italy), May 1998 .
- PhD Course on "Solid Modeling Modeling and Advanced Computer Graphics", Department of Computer Science, University of Pisa, 1996.

Organization of Schools for graduate students and young researchers:

- International School on Shape Modeling, 2004.
- Machine Vision, Genova, 2012.
- International School on Homology: Theoretical and Computational Issues, Genova, 2015.

Advising

Former PhD students

- Enrico Puppo, presently full professor of Computer Science at the University of Genova.
- Paola Magillo, presently associate professor of Computer Science at the University of Genova.
- Paolo Cignoni, presently Director of research at the National Research Council of Italy in Pisa (Italy).
- Elisabetta Bruzzone, formerly, assistant professor of Computer Science at the University of Genova, and then senior scientist at Elsag-Bailey.
- Franco Morando, University of Genova, currently enterpreneur
- Emanuele Danovaro, University of Genova, formerly assistant professor at the Free University of Bozen, Italy and currently research scientist at the Italian National Research Council.
- Davide Sobrero, University of Genova (co-advised with E.Puppo) graduated in 2006, formerly research scientist at the Italian Institute of Technology (IIT) and currently research scientist at the Italian National Research Council.
- Michael Lee, University of Maryland (co-advised with H.Samet), associate professor at Columbia Union College, Maryland.

- Annie Hui, University of Maryland, graduated in 2008, associate professor at Northern Virginia Community College (co-advised with H.Samet).
- Kenneth Weiss, University of Maryland, graduated in April 2011, Team Leader at Lawrence Livermore Res. Labs (co-advised with H.Samet).
- Maria Vitali, University of Genova (co-advised with P. Magillo), entrepreneur and founder of a start-up company.
- David Canino, University of Genova, graduated in 2011, entrepreneur
- Federico Iuricich, University of Genova, PhD student in Computer Science, graduated May 2014, assistant professor at Clemson University.
- Lidija Comic, University of Novisad, Serbia (co-advisor), PhD student in Mathematics, graduated in March 2014, lecturer at the University of Novisad.
- Davide Bolognini (co-advised with M.E. Rossi), University of Genova, PhD student in Mathematics, graduated February 2015, Postdoc at the University of Bologna.
- Riccardo Fellegara (co-advised with Kenneth Weiss), University of Genova, PhD student in Computer Science, graduated May 2015, senior scientist at the German Aerospace Agency.
- Ulderico Fugacci (co-advised with M.E. Rossi), University of Genova, PhD student in Computer Science, graduated May 2016, research staff member, Italian National Research Council.
- Sara Scaramuccia (co-advised with C. Landi), University of Genova, PhD student in Computer Science, graduated May 2018, postdoc Politecnico of Torini (Italy).
- Chao Feng, State Key Laboratory for Manufacturing Systems Engineering, Xi'an Jiaotong University (co-advised).

Current PhD students

- Zachary Burnett, University of Maryland at College Park
- Noel Dyer, University of Maryland at College Park
- Haoan Feng, University of Maryland at College Park
- Yuehui Qian, University of Maryland at College Park
- Yunting Song, University of Maryland at College Park
- Xin Xu, University of Maryland at College Park

Master Thesis Advisor for over 100 Master students in Computer Science and Mathematics at the University of Genova.

Member of numerous PhD Committees at the University of Maryland, University of Genova, of Pisa, of Rome, of Bari, at INRIA (Sophia Antipolis), ETH (Zuerich), Carleton University (Ottawa) and University of Novisad (Serbia), at Delft University (Holland).

Research Grants

Grants from NSF, NASA and University of Maryland

- PI, NSF Grant, *III: Small: Geospatial Data Representation and Analysis through the Stellar Decomposition*, 2019-2022.
- PI, *Topology-based Analysis of Big Social Networks*, Behavioral and Social Science Dean Research Grant, University of Maryland at College Park, 2018-2019.
- co-PI, NASA, *DeepSens: Open Source Deep Learning Classification and Visualization of Remote Sensing Data*, 2018-2019.
- PI, *Representations for Modeling and Analysis of Big Scattered Geospatial Data*, University of Maryland at College Park, 2017.

Grants from the European Commission (EC) and from NATO

- Principal Investigator in the Joint U.S./Italy Project on "Application of Structured Graphs to VLSI Design" with University of Nebraska, USA (1988–90).
- Principal Investigator in the NATO Collaborative Project on "Form Features and Tolerances in a Three-dimensional Hierarchical Model" with Rensselaer Polytechnic Institute (1987–90).
- Principal Investigator in the EC Human, Capital and Mobility "SPACENET: a Network for Qualitative Spatial Reasoning (1995–97).
- Principal Investigator in the EC BRITE Basic Research Project "VENICE: Virtual Environment Interface by Sensory Integration for Inspection and manipulation Control in Multifunctional Underwater Vehicles" (1996–99).
- Principal Investigator in the EC Research Training Network "Multi-resolution in Geometric Modeling" (MINGLE) (2000–2003).
- Participation into Network of Excellence AIM@SHAPE, European Commission, 2004-2007.

Grants from the Italian Ministry of Education, University and Scientific Research (MIUR)

- "Multiresolution modeling of multidimensional shapes", Principal Investigator (2013-2016)
- Participation in the Collaborative Research Project "WEB-GIS: Geographical Information Systems over the Web" (2002–2003).
- Principal Investigator in the Collaborative Research Project "MACROGeo: Algorithmic and Computational Methods for Geometric Object Representation" (2002–2003).
- National Coordinator of the Research Project "Representing and Processing Spatial Data in Geographic Information Systems' (2001–2002).
- Principal Investigator in the Collaborative Research Project "Multi-resolution Models for Spatial Data Representation" in the National Research Project on "Representing and Processing Spatial Data in Geographic Information Systems' (2001–2002), co-sponsored by the University of Genova
- Principal Investigator in the National Research Project on Cultural Heritage: "Cultural Heritage: Advanced Methods for Acquisition and Rendering" (1999–2002).
- Principal Investigator in the National Collaborative Research Project "Development of a Multimedia Parallel Workstation" (1992–96).

Grants from the National Research Council of Italy

- Principal Investigator in the National Strategic Research Project "Information Technology: Parallel and Vector Computing" (1985–86).
- Principal Investigator in the National Strategic Research Project "Computational Mathematics: Industrial and Technological Aspects of Mathematics" (1988–89).
- Principal Investigator in the National Strategic Research Project "Knowledge through Images. An Application to Cultural Heritage" (1994–95).
- Principal Investigator in the National Collaborative Research Project "Models and Systems for Handing Environmental and Territorial Data" (1995–96).
- Principal Investigator in the National Collaborative Research Project "Multi-resolution Models for Visualization of Multidimensional Scalar Fields" (1996–97).
- Principal Investigator in the National Collaborative Research Project "A Library for Geometric Modeling Applications" (1998–99).

Grants from the University of Genova

- Computational topology tools for shape modeling and analysis (October 2013-Sept. 2015), Principal Investigator.
- Co-sponsoring of the Collaborative Research Project "Multi-resolution Models for Spatial Data Representation" (2001-2002) Principal Investigator.

- Multi-resolution Representation for Spatial Data in a GIS (1999), Principal Investigator.
- Multi-resolution Modeling for Virtual Reality and Scientific Visualization (1998), Principal Investigator.
- Design and Implementation of Algorithms and Systems (1995–97), Principal Investigator.

Program committees of International Conferences

- Program Committee Member, International Conference on Shape Modeling (SMI 2022)
- Program Committee Member, International Conference on Computer Science and Information Technology (COSIT 2022)
- Program Committee Member, International Conference on Visualization (VIS 2022)
- Program Committee Member, International Workshop on Combinatorial Image Analysis (IWCIA 2022)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2021)
- Program Committee Member, International Conference on Shape Modeling (SMI 2021)
- Program Committee Member, International Conference on Visualization (VIS 2021)
- Program Committee Member, International Workshop on Combinatorial Image Analysis (IWCIA 2020)
- General Co-Chair, Computational Visual Media Conference, Macao, 2020.
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2020)
- Program Committee Member, International Conference on Shape Modeling (SMI 2020)
- Program Committee Member, International Conference on Visualization (VIS 2020)
- Program Committee Member, International Conference on Computer Science and Information Technology (COSIT 2020)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2020)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2019)

- Program Committee Member, International Conference on Shape Modeling (SMI 2019)
- Program Committee Member, IEEE International Conference on Visualization (VIS 2019)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2018)
- Program Committee Member, International Conference on Shape Modeling (SMI 2018)
- Program Committee Member, 10th International Conference on Geographic Information Science (GIScience 2018)
- Program Committee Member, 18th International Workshop on Combinatorial Image Analysis (IWCIA 2018)
- Program Committee Member, International Conference on Shape Modeling (SMI 2017)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2017)
- Program Committee Member, 17th International Workshop on Combinatorial Image Analysis (IWCIA 2016)
- Program Committee Member, International Conference on Shape Modeling (SMI 2016)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2016)
- Program Committee Member, Eurographics Conference (2016)
- Program Committee Member, 9th International Conference on Geographic Information Science (GIScience 2016)
- Track Chair, International Conference on Image Analysis and Processing (2015)
- Program Committee Member, International Conference on Shape Modeling (SMI 2015)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2015)
- Program Committee Member, International Conference on Shape Modeling (SMI 2015)
- Program Committee Member, AGILE International Conference on Geographic Information Science (2014)

- Program Committee Member, 8th International Conference on Geographic Information Science (GIScience 2014)
- Program Committee Member, 17th International Workshop on Combinatorial Image Analysis (IWCIA 2014)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2014)
- Program Committee Member, International Conference on Image Analysis and Processing (2013)
- Program Committee Member, International Conference on Shape Modeling (SMI 2013)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2013)
- Program Committee Member, Joint IEEE/ Eurographics Conference on Visualization (Eurovis), 2013
- Program Committee Member, AGILE International Conference on Geographic Information Science (2012)
- Program Committee Member, IEEE Visweek 2012
- Program Committee Member, Eurographics Conference (2012)
- Program Committee Member, International Conference on Shape Modeling (SMI 2012)
- Program Committee Senior Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2013)
- Program Committee Member, 8th International Conference on Geographic Information Science (GIScience 2012)
- Program Committee Member, ACM/EUROGRAPHICS Symposium on Geometry Processing (2012)
- Program Committee Member, Ninth ACM/EUROGRAPHICS Symposium on Geometry Processing (2011)
- Program Committee Member, 18th ACM Conference on Geographic Information Systems (2011)
- Program Committee Member, International Conference on Image Analysis and Processing (2011)
- Program Committee Member, IEEE Visweek 2011

- Program Committee Member, ACM-SIAM Conference on Solid and Physical Modeling (2011)
- Program Committee Member, AGILE International Conference on Geographic Information Science (2011)
- Program Committee Member, ACM/SIGSPATIAL Conference on Geographic Information Systems (2011)
- Program Committee Member, International Conference on Shape Modeling (SMI 2011)
- Program Committee Member, Eighth ACM/EUROGRAPHICS Symposium on Geometry Processing (2010)
- Program Committee Member, 18th ACM Conference on Geographic Information Systems (2010)
- Program Committee Member, International Conference on Shape Modeling (SMI 2010)
- Program Committee Member, IEEE Visweek 2010
- Program Committee Member, Sixth international conference on Geographic Information Science (GIScience 2010)
- Program Committee Member, Computer Graphics International, 2010
- Program Committee Member, Seventh ACM/EUROGRAPHICS Symposium on Geometry Processing (2009)
- Program Committee Member, International Conference on Image Analysis and Processing (2009)
- Program Committee Member, 13th International Workshop on Combinatorial Image Analysis (IWCIA 2009)
- Program Committee Member, International Conference on Shape Modeling (SMI 2009)
- Program Committee Member, ACM Symposium on Solid and Physical Modeling (2009)
- Program Committee Member, Workshop on Computational Topology in Image Context (2009)
- Program Committee Member, International Conference on Computer Science and Information Technology (COSIT 2009)
- Program Committee Member, 17th ACM Conference on Geographic Information Systems (2009)

- Program Committee Member, International Conference on Shape Modeling (SMI 2008)
- Program Committee Member, ACM Symposium on Solid and Physical Modeling (2008)
- Program Committee Member, Pacific Graphics (2008)
- Program Committee Member, Eurographics Conference (2008)
- Program Committee Member, 16th ACM Workshop on Geographic Information Systems (2008)
- Program Committee Member, Sixth ACM/EUROGRAPHICS Symposium on Geometry Processing (2008)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2008)
- Program Committee Member, IEEE Conference on 3D Data Processing and Transmission (2008)
- Program Committee Member, Computer Graphics International (2008)
- Program Committee Member, International Conference on Computer Graphics Theory and Applications (2008)
- Program Committee Member, Workshop on Volume Graphics (2008)
- Co-Chairperson, International Symposium on Shape Modeling and Reasoning for Industrial and Biomedical Applications (2007)
- Program Committee Member, Computer Graphics International (CGI 2007)
- Program Committee Member, 15th ACM Conference on Geographic Information Systems (2007)
- Program Committee Member, International Conference on Shape Modeling (SMI 2007)
- Program Committee Member, ACM Symposium on Solid and Physical Modeling (2007)
- Program Committee Member, IEEE Visualization Conference (2007)
- Program Committee Member, Eurographics Conference (2007)
- Program Committee Member, Fifth ACM/EUROGRAPHICS Symposium on Geometry Processing (2007)
- Program Committee Member, Workshop on Volume Graphics (2007)

- Program Committee Member, International Conference on Computer Graphics Theory and Applications (2007)
- Program Committee Member, 10th AGILE International Conference on Geographic Information Science (2007)
- Program Committee Member, International Conference on Computer Science and Information Technology (COSIT 2007)
- Program Committee Member, 14th ACM Conference on Geographic Information Systems (2006)
- Program Committee Member, International Conference on Shape Modeling (SMI 2006)
- Program Committee Member, ACM Symposium on Solid and Physical Modeling (2006)
- Program Committee Member, Digital Geometry and Computer Imagery (DGCI 2005)
- Program Committee Member, Fourth ACM/EUROGRAPHICS Symposium on Geometry Processing (2006)
- Program Committee Member, International Conference on Spatial Data Handling (SDH 2006)
- Program Committee Member, International Conference on Computer Graphics Theory and Applications, 2006.
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2006)
- Program Committee Member, International Conference on Digital Geometry for Computer Imagery (DGCI 2006)
- Program Committee Member, Workshop on Volume Graphics (2006)
- Program Committee Member, GISPLANET 2005
- Program Committee Member, International Conference on Shape Modeling (SMI 2005)
- Program Committee Member, ACM Symposium on Solid and Physical Modeling (2005)
- Program Committee Member, Digital Geometry and Computer Imagery (DGCI 2005)
- Program Committee Member, ISPRS Workshop on Dynamic and Multi-dimensional GIS (DMGIS 05).
- Program Committee Member, International Conference on Image Analysis and Processing (ICIAP 05)

- Program Committee Member, Computer Graphics International (CGI 2005)
- Program Committee Member, 12th International Conference on Image Analysis and Processing (2005)
- Program Committee Member, 13th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG 2005)
- Program Committee Member, 13th ACM Workshop on Geographic Information Systems (2005)
- Program Committee Member, Seventh International Conference on Spatial Information Theory (COSIT 2005)
- Program Committee Member, Workshop on Semantic Visual Environments (2005)
- Program Committee Member, Third ACM/EUROGRAPHICS Symposium on Geometry Processing (2005)
- Program Committee Member, Pacific Graphics (2005)
- Program Committee Member, 12th ACM Conference on Geographic Information Systems (2004)
- Program Committee Member, International Conference on Spatial Data Handling (SDH 2004)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2004)
- Program Committee Member, International Conference on Pattern Recognition (ICPR 2004)
- Program Committee Member, International Conference on Shape Modeling (SMI 2004)
- Program Committee Member, Second ACM/EUROGRAPHICS Symposium on Geometry Processing (2004)
- Program Committee Member, Second Symposium on 3D Data Processing, Visualization and Transmission (2004)
- Program Committee Member, ACM Symposium on Solid Modeling and Applications (2004)
- Program Committee Member, 11th ACM Conference on Geographic Information Systems (2003)
- Program Committee Member, 12th International Conference on Image Analysis and Processing (2003)
- Program Committee Member, IEEE Visualization Conference (2003)

- Program Committee Member, International Conference on Spatial Data Handling (SDH 2003)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2003)
- Program Committee Member, First ACM/EUROGRAPHICS Symposium on Geometry Processing (2003)
- Program Committee Member, 10th ACM Workshop on Geographic Information Systems (2003)
- Program Committee Member, International Conference on Spatial Data Handling (SDH 2002)
- Program Committee Member, IEEE Visualization Conference (2002)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2002)
- Program Committee Member, International Conference on Shape Modeling (SMI 2002)
- Program Committee Member, Joint Eurographics - IEEE VGTC Symposium on Visualization (2002)
- Program Committee Member, First Symposium on 3D Data Processing, Visualization and Transmission (2002)
- Program Committee Member, International Conference on Pattern Recognition (ICPR 2002)
- Program Committee Member, Fifth International Conference on Spatial Information Theory (2001)
- Program Committee Member, Fourth International Workshop on Visual Form (2001)
- Program Committee Member, First International Symposium on Digital Earth Moving (2001)
- Program Committee Member, IEEE Visualization Conference (2001)
- Program Committee Member, International Conference on Geographic Information Science (GIScience 2001)
- Program Committee Member, International Conference on Shape Modeling (SMI 2001)
- Program Committee Member, 11th International Conference on Image Analysis and Processing (2001)
- Program Committee Member, IEEE Conference on Visualization (2000)

- Program Committee Member, International Conference on Geographic Information Science (GIScience 2000)
- Program Committee Member, Fourth International Conference on Spatial Information Theory (1999)
- Program Committee Member, Sixth International Symposium on Large Spatial Data Bases (1999)
- Program Committee Member, Eurographics Conference (1999)
- Program Committee Member, 10th International Conference on Image Analysis and Processing (1999)
- Program Committee Member, IEEE Conference on Visualization (1999)
- Program Committee Member, Sixth ACM Workshop on Geographic Information Systems (1998)
- Program Committee Member, Third International Conference on Spatial Information Theory (1997)
- Program Committee Member, Fifth International Symposium on Large Spatial Data Bases (1997)
- Program Committee Member, Fifth Workshop on Algorithms and Data Structures (1997)
- Program Committee Member, International Conference on Urban, Regional and Environmental Planning (1997)
- Program Committee Member, Ninth International Conference on Image Analysis and Processing (1997)
- Program Committee Member, Third International Workshop on Visual Form (1997)
- Program Committee Member, International Conference on Urban, Regional and Environmental Planning (1996)
- General Chairperson, Eighth International Conference on Image Analysis and Processing (1995)
- Program Committee Member, Third ACM Workshop on Geographic Information Systems (1995)
- Program Committee Member, International Symposium on Scientific Visualization (1995)
- Program Committee Member, Second International Conference on Spatial Information Theory (1995)

- Program Committee Member, Fourth International Symposium on Large Spatial Data Bases (1995)
- Program Committee Member, SAC'94: Workshop on GIS (Geographical Information Systems) (1994)
- Program Committee Member, Second International Workshop on Visual Form (1994)
- Co-Chairperson, Italy/Israel Symposium on Computer Vision (1991)
- Program Committee Member, First International Conference on Spatial Information Theory (1993)
- Program Committee Member, Seventh International Conference on Image Analysis and Processing (1993)
- Program Committee Member, First International Workshop on Visual Form (1991)
- Program Committee Member, Sixth International Conference on Image Analysis and Processing (1991)
- Co-Chairperson, Italy/Israel Symposium on Computer Vision (1991)
- Program Committee Member, Fifth International Conference on Image Analysis and Processing (1989)
- Program Committee Member, International Conference on Computer Graphics, PIXIM 88 (1988)