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Research Interests

- DISCRETE AND COMBINATORIAL GEOMETRY
 - Convex hulls & Voronoi diagrams in high dimensions
 - Minkowski sums in high dimensions
- GEOMETRIC COMPUTING AND COMPUTATIONAL GEOMETRY
 - Algorithms for Voronoi diagrams of non-punctual objects
 - Analysis and efficient evaluation of geometric predicates
 - Design of geometric software and efficient implementation of geometric algorithms
 - Art gallery problems
 - Kinetic Data Structures for Voronoi diagrams and applications to proximity problems
- COMPUTER-AIDED GEOMETRIC DESIGN
 - Shape approximation
 - Shape design and/or reconstruction
 - Shape-preserving interpolation

Education

- 1997-2001 *Ph.D.* in Scientific Computing and Computational Mathematics, Stanford University, USA.
Adviser: Leonidas J. Guibas.
Dissertation: *Proximity structures for moving objects in constrained and unconstrained environments.*
- 1995-1997 *M.S.* in Scientific Computing and Computational Mathematics, Stanford University, USA.
- 1990-1995 *Diploma* in Naval Architecture and Marine Engineering, National Technical University of Athens (NTUA), Greece.
Thesis Adviser: Panagiotis D. Kaklis.
Thesis title: *Constructive methods for shape-preserving interpolation in \mathbb{R}^2 and \mathbb{R}^3 .*

Academic/Research Experience

- 2011-PRESENT Tenured Assistant Professor. *Department of Applied Mathematics, University of Crete, Greece.*
- 2006-2010 Assistant Professor (tenure track). *Department of Applied Mathematics, University of Crete, Greece.*
- 2005-2006 Visiting Associate Professor. *Department of Applied Mathematics, University of Crete, Greece.*
- 2003-2004 Assistant Professor (tenure track). *Computer Science & Engineering Department, University of Notre Dame, USA.*
- 2001-2002 Post-doc. *Project PRISME, INRIA Sophia-Antipolis, France.*
- 1997-2001 Research Assistant. *Graphics Laboratory, Stanford University, USA.*
- 1995-1997 Research Assistant. *SCCM Program, Stanford University, USA.*

Other Positions

- 2004-2013 Member of the [CGAL](#) Editorial Board.
- 2006-2008 *Software Coordinator* for the European Project:
ACS – Algorithms for Complex Shapes with certified topology and numerics
- 2004-2005 Military service, Greek Navy.

Visits

- DECEMBER 2011 Visit at the École Normale Supérieure, Paris, France (3 weeks).
- MARCH 2013-AUGUST 2013 Sabbatical at the École Polytechnique, Palaiseau, France (6 months).

Supervision

Bachelor Students Supervised

- Jordan Iordanov
Thesis: *The Euclidean InSphere Predicate*, B.S. thesis, Department of Applied Mathematics, University of Crete, February 2013.
- Sofia-Anna Piperidi
Thesis: *Exact Comparison of Algebraic Numbers of Degree at most 3*, B.S. thesis, Department of Applied Mathematics, University of Crete, February 2013.

Master Students Supervised

- Emmanuel Kamarianakis
Thesis: *Predicates for the Euclidean Voronoi diagram for axis-aligned and ortho-45° line segments*, M.S. thesis, Interdepartmental Graduate Program in “Mathematics and its Applications”, University of Crete, July 2011.
- Einini Koytaki-Pantermaki
Thesis: *Construction of Surrounding Curves for Convex Polygonal Objects, with Voronoi Diagrams*, M.S. thesis, Interdepartmental Graduate Program in “Mathematics and its Applications”, University of Crete, June 2009.
- Joseph E. Lammersfeld
Thesis: *Implementing Four-Dimensional Triangulations in CGAL*, M.S. thesis, Computer Science & Engineering Department, University of Notre Dame, February 2006.

On-going Doctoral Theses

- Emmanuel Kamarianakis (Ph.D. candidate)
Ph.D. Thesis topic: *Voronoi diagrams in 3D for axes-aligned objects*.

Post-doctoral researchers

- Christos Konaxis. November 2011 – August 2013.
Topic: *Maximum complexity of Minkowski sums of convex polytopes*.

Project participation

- ΘΑΛΗΣ: *Geometric Computing (GeomComp)*. **Duration:** September 2012 – September 2015.
Budget: 520,000 €. **Position:** Team leader in Crete.
<http://geomcomp.di.uoa.gr>
- ACS – *Algorithms for Complex Shapes with certified topology and numerics*. **Duration:** May 2005 – April 2008.
Budget: Total budget: 2,145,206 €. Contribution of the EU: 1,700,000 €. **Position:** Software Coordinator.
http://cordis.europa.eu/projects/rcn/74641_en.html
- ECG – *Effective Computational Geometry for Curves and Surfaces*. **Duration:** May 2001 – April 2004.
Budget: Total budget: 1,595,600 €. Contribution of the EU: 1,029,000 €. **Position:** Post-doc.
<http://www-sop.inria.fr/prisme/ECG/>

Thesis committee participation

- Member of M.S. thesis committee:
Evgenios Kornaropoulos, *Dominance Drawing for Non-Planar Graphs*, School of Sciences, Computer Science Department, University of Crete, M.S., June 2012.
- Member of M.S. thesis committee:
Anastasios Hondros, *Probabilistic Methods and Applications to Lower Bounds of Complexities*, Interdepartmental Graduate Program in “Mathematics and its Applications”, University of Crete, M.S., March 2011.
- Member of Ph.D. thesis committee:
Manuel Caroli, *Triangulating Point Sets in Orbit Spaces*, École Doctorale STIC, Université de Nice - Sophia Antipolis, Ph.D., December 2010.
- Member of Ph.D. thesis committee:
Vassilis L. Tsiaras, *Algorithms for the Analysis and Visualization of Biomedical Networks*, School of Sciences, Computer Science Department, University of Crete, Ph.D., October 2009.
- Member of Ph.D. thesis committee:
George M. Tzoumas, *Computational Geometry for Curved Objects: Voronoi Diagrams in the Plane*, School of Sciences, Department of Informatics and Telecommunications, National Kapodistrian University of Athens, Ph.D., September 2009.
- Member of M.S. thesis committee:
Kaliopi M. Peroyiannaki, *Nomography: A Forgotten Branch of Applied Mathematics*, Interdepartmental Graduate Program in “Mathematics and its Applications”, University of Crete, M.S., May 2009.
- Member of Ph.D. thesis committee:
Konstantinos V. Kostas, *Virtual Reality Kernel with Support for Ship Life-cycle Modelling*, School of Naval Architecture and Marine Engineering, National Technical University of Athens, Ph.D., 2006.
- Member of M.S. thesis committee:
Ewa Misiolek, *Efficient Algorithms for Simplifying Flow Networks*, Computer Science & Engineering Department, University of Notre Dame, M.S., 2003.
- Member of Ph.D. thesis committee:
Qun Ma, *Novel Multiscale Algorithms for Molecular Dynamics*, Computer Science & Engineering Department, University of Notre Dame, Ph.D., 2003.

Teaching Experience

Undergraduate courses

Undergraduate courses are taught 6 hours per week for thirteen weeks.

AUTUMN 2013 *EM202: Design & Analysis of Algorithms*, University of Crete.
 AUTUMN 2012 *EM111: Analytic Geometry and Linear Algebra*, University of Crete.
 SPRING 2012 *EM102: Computer Programming*, University of Crete.
 AUTUMN 2011 *EM201: Discrete Mathematics*, University of Crete.
 SPRING 2011 *EM202: Design & Analysis of Algorithms*, University of Crete.
 AUTUMN 2010 *EM201: Discrete Mathematics*, University of Crete.
 SPRING 2010 *EM202: Design & Analysis of Algorithms*, University of Crete.
 AUTUMN 2009 *EM201: Discrete Mathematics*, University of Crete.
 SPRING 2009 *EM102: Computer Programming*, University of Crete.
 AUTUMN 2008 *EM101: Introduction to Computers*, University of Crete.
 SPRING 2008 *HY240: Data Structures*, University of Crete.
 AUTUMN 2007 *EM203: Theory of Computation*, University of Crete.
 AUTUMN 2006 *EM201: Discrete Mathematics*, University of Crete.
 SPRING 2006 *EM202: Theory of Algorithms*, University of Crete.
 AUTUMN 2005 *EM201: Discrete Mathematics*, University of Crete.
 SPRING 2004 *CSE351: Theory of Computing*, University of Notre Dame.
 AUTUMN 2003 *CSE411: Automata*, University of Notre Dame.

Graduate courses

Graduate courses are taught 4 hours per week for thirteen weeks.

SPRING 2008 *A32: Computability* (reading course), University of Crete.
 SPRING 2007 *EM364/HY584: Geometric Algorithms*, University of Crete.
 The course has been taught in collaboration with I. Tollis.
 SPRING 2007 *A33: Algorithms and Complexity*, University of Crete.
 SPRING 2006 *EM369/HY584: Geometric Algorithms*, University of Crete.
 The course has been taught in collaboration with I. Tollis.
 SPRING 2003 *CSE511: Complexity & Algorithms*, University of Notre Dame.

Miscellaneous

- Born on April 17, 1972 in Piraeus, Greece. Greek citizen.
- Marital status: married with three children.
- Programming languages: C++, C, Java, FORTRAN, Perl, HTML/PHP.
- Professional Memberships: ACM
- Languages: Greek (native language), English (fluent), French (good).

Professional Experience

Workshop/Symposium Organizer

- Workshop on Geometric Computing. Heraklion, Greece, January 21-25, 2013.
Co-organized with O. Devillers, M. Teillaud and E. Tsigaridas.
<http://www.acmac.uoc.gr/GC2013/>
- Minisymposium on Publicly Available Geometric/Topological Software. Chapel Hill, NC, United States, June 17 & 19, 2012 (part of CG-Week 2012). Co-organized with Monique Teillaud.
<http://gts2012.tem.uoc.gr/>
- 31st CGAL Developer Meeting. Heraklion, Crete, Greece, April 11-15, 2011.
http://www.tem.uoc.gr/~mkaravel/CGAL_Dev_Meeting11/
- 22nd European Workshop on Computational Geometry (EWCG06). Delphi, Greece, March 27-29, 2006.
Co-organized with Ioannis Z. Emiris and Leonidas Palios.
<http://cgi.di.uoa.gr/~ewcg06/>

Workshop/Symposium Committee Member

- 7th International Symposium on Voronoi diagrams in Science and Engineering (ISVD2010). Québec City, Québec, Canada, June 28-30, 2010.
- 22nd European Workshop on Computational Geometry (EWCG06). Delphi, Greece, March 27-29, 2006.

Workshop/Conference Partitipation by Invitation

- *Dagstuhl Seminar 13101: Computational Geometry*, Dagstuhl, Germany, March 3–8, 2013.
<http://www.dagstuhl.de/13101>
- *OrbiCG/Triangles Workshop on Computational Geometry*, INRIA Sophia-Antipolis Méditerranée, France, December 8–10, 2010.
<https://www-sop.inria.fr/geometrica/collaborations/triangles/Workshop/>
- *3rd International Congress on Mathematical Software*, Kobe, Japan, September 13–17, 2010.
<http://www.math.kobe-u.ac.jp/icms2010/>

Have served as a referee for the following books, journals and referred conferences:

Chapters in Books

- *Effective Computational Geometry for Curves and Surfaces*, Jean-Daniel Boissonnat and Monique Teillaud eds., Springer 2007.

Journals

- ACM Transactions on Mathematical Software (TOMS)
- Algorithmica
- Computational Geometry: Theory and Applications (CGTA)
- Computer-Aided Design (CAD)
- Discrete & Computational Geometry (DCG)
- IEEE Transactions on Automation Science and Engineering
- IEEE Transactions on Robotics and Automation
- IEEE/ASME Transactions on Mechatronics
- International Journal on Computational Geometry and Applications (IJCGA)
- Information Processing Letters (IPL)
- Journal of Molecular Graphics and Modelling
- Mathematics for Computer Science (MCS)

Conferences

- 40th International Colloquium on Automata, Languages and Programming (ICALP 2013)
- 29th ACM Symposium on Computational Geometry (SoCG 2013)
- 27th ACM Symposium on Computational Geometry (SoCG 2011)
- 7th International Conference on Curves and Surfaces (2010)
- 36th International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2010)
- 26th ACM Symposium on Computational Geometry (SoCG 2010)
- 20th ACM-SIAM Symposium on Discrete Algorithms (SODA 2010)
- 25th ACM Symposium on Computational Geometry (SoCG 2009)
- 24th ACM Symposium on Computational Geometry (SoCG 2008)
- 10th Workshop on Algorithms and Data Structures (WADS 2007)
- 23th ACM Symposium on Computational Geometry (SoCG 2007)
- 22th ACM Symposium on Computational Geometry (SoCG 2006)
- 32nd International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2006)
- 14th European Symposium on Algorithms (ESA 2006)
- 20th ACM Symposium on Computational Geometry (SoCG 2004)
- 14th International Symposium on Algorithms and Computation (2003)
- 19th ACM Symposium on Computational Geometry (SoCG 2003)
- 18th ACM Symposium on Computational Geometry (SoCG 2002)
- 10th European Symposium on Algorithms (ESA 2002)
- Eurographics 2002

Software development

- Prototype code in C++ for *Shape-preserving interpolation for curves in \mathbb{R}^3* . The code takes as input a sequence of points in \mathbb{R}^3 and appropriate boundary conditions and computes a smooth spline interpolant that preserves the geometric information implied by the input sequence of points. The geometric information preserved is convexity, torsion, coplanarity and collinearity. Two methods have been implemented, one that produces G^1 -continuous cubic splines, and one that produces C^3 -continuous non-uniform degree splines.
- Code in C++ for *adapting Delaunay graphs to Voronoi diagrams* seen as arrangements. In particular, the code eliminates degenerate features of the dual of the Delaunay graph (such edges of zero length and faces of zero area), which are artifacts of the way the Delaunay graph is computed, and provides a non-mutable view of the Voronoi diagram seen as an arrangement. The code is part of the basic library of CGAL (Computational Geometry Algorithms Library - <http://www.cgal.org/>) and has appeared in CGAL version 3.2.
URL: http://www.cgal.org/Manual/latest/doc_html/cgal_manual/packages.html#Pkg:VoronoiDiagramAdaptor2
- Code in C++ for computing *the planar Voronoi diagram for (possibly intersecting) segments* incrementally. The code is part of the basic library of CGAL (Computational Geometry Algorithms Library - <http://www.cgal.org/>) and has appeared in CGAL version 3.1.
URL: http://www.cgal.org/Manual/latest/doc_html/cgal_manual/packages.html#Pkg:SegmentDelaunayGraph2
- Code in C++ for computing dynamically *the planar Apollonius diagram*, also known as the additively weighted Voronoi diagram. The code is part of the basic library of CGAL (Computational Geometry Algorithms Library - <http://www.cgal.org/>) and has appeared in CGAL version 3.0.
URL: http://www.cgal.org/Manual/latest/doc_html/cgal_manual/packages.html#Pkg:ApolloniusGraph2

Presentations

Plenary/Keynote Talks

- Delaunay triangulations and Voronoi diagrams in CGAL: Algorithms, Data Structures and Practice. *7th International Symposium on Voronoi Diagrams in Science and Engineering*, Québec City, Québec, Canada, June 30th, 2010.

Invited Talks

- Qualitative symbolic perturbations. *Dagstuhl Seminar 13101: Computational Geometry*, Dagstuhl, Germany, March 7th, 2013.
- Solving problems with CGAL: an example using the 2D Apollonius graph package. *Minisymposium on Publicly Available Geometric/Topological Software*, Chapel Hill, North Carolina, United States, June 19th, 2012.
- Tight bounds on the number of faces of the Minkowski sum of convex polytopes. *ΕρΓΑ-GALAAD SAGA Workshop*, Athens, Greece, January 10th, 2012.
- Convex hulls of spheres and convex hulls of convex polytopes lying on parallel hyperplanes. *OrbiCG/Triangles Workshop on Computational Geometry*, INRIA Sophia-Antipolis Méditerranée, France, December 10th, 2010.
- Shape-preserving interpolation in two and three dimensions. *2nd Annual SAGA School*, Kolympari (Crete), Greece, October 7th, 2010.
- Exact geometric and algebraic computations in CGAL. *3rd International Congress on Mathematical Software*, Kobe, Japan, September 17th, 2010.
- CGAL: The Computational Geometry Algorithms Library. *2004 IMA New Directions Short Course on Computational Topology*, Minneapolis, Minnesota, United States, July 9th, 2004.

Workshop & Conference Talks

- The maximum number of faces of the Minkowski sum of three convex polytopes. *29th Annual ACM Symposium on Computational Geometry*, Rio de Janeiro, Brazil, June 18th, 2013.
- Qualitative Symbolic Perturbations. *GeomComp Kickoff Meeting*, Athens, Greece, February 22nd, 2013.
- Exact bounds on the number of faces of the Minkowski sum of convex polytopes. *Workshop on Convex Geometric Analysis (on the occasion of the retirement of Prof. S. Papadopoulou)*, Heraklion, Crete, Greece, September 12th, 2012.
- A geometry-based perturbation scheme for 2D Apollonius diagrams. *33rd CGAL Developers Meeting*, Tel Aviv, Israel, May 22nd, 2012.
- Analysis of the Incircle predicate for the Euclidean Voronoi diagram of axes-aligned line segments. *28th European Workshop on Computational Geometry (EuroCG 2012)*, Assisi, Italy, March 19th, 2012.
- The maximum number of faces of the Minkowski sum of two convex polytopes. *23rd Annual ACM-SIAM Symposium on Discrete Algorithms*, Kyoto, Japan, January 17th, 2012.
- Convex hulls of spheres and convex hulls of convex polytopes lying on parallel hyperplanes. *27th Annual ACM Symposium on Computational Geometry*, Paris, France, June 14th, 2011.
- Shape-preserving interpolation in 2D and 3D. *30th CGAL Developers Meeting*, Sophia-Antipolis, France, June 4th, 2010.

- Guarding curvilinear art galleries with vertex or point guards. *ACS General Workshop*, Berlin, Germany, May 10th, 2007.
- Art Gallery Problems for Polygons with Curvilinear Walls. *ACS Research Workshop*, Graz, Austria, March 22nd, 2007.
- Voronoi Diagrams in CGAL. *22nd European Workshop on Computational Geometry*, Delphi, Greece, March 29th, 2006.
- A Robust and Efficient Implementation for the Segment Voronoi Diagram. *International Symposium on Voronoi Diagrams in Science and Engineering*, Tokyo, Japan, September 13th, 2004.
- Segment Voronoi Diagrams in CGAL. *2nd CGAL User Workshop*, New York, New York, United States, June 12th, 2004.
- A computational framework for handling motion. *ECG Final Workshop*, Paris, France, April 2nd, 2004.
- The Voronoi Diagram of Convex Objects in the Plane. *11th European Symposium on Algorithms*, Budapest, Hungary, September 16th, 2003.
- On the combinatorial complexity of Euclidean Voronoi cells and convex hulls of d-dimensional spheres. *14th ACM-SIAM Symposium on Discrete Algorithms*, Baltimore, Maryland, United States, January 13th, 2003.
- Root comparison techniques applied to computing the additively weighted Voronoi diagram. *14th ACM-SIAM Symposium on Discrete Algorithms*, Baltimore, Maryland, United States, January 13th, 2003.
- Möbius diagrams and applications. *ECG Workshop on Computational Topology*, Sophia-Antipolis, France, October 18th, 2002.
- Dynamic additively weighted Voronoi diagrams in 2D. *10th European Symposium on Algorithms*, Rome, Italy, September 10th, 2002.
- Evaluation of the predicates of additively weighted Voronoi diagrams. *ECG General Workshop*, Zurich, Switzerland, May 23rd, 2002.
- Dynamic additively weighted Voronoi diagrams in 2D. *ECG General Workshop*, Zurich, Switzerland, May 22nd, 2002.
- Voronoi Diagrams for Moving Disks and Applications. *7th International Workshop on Algorithms and Data Structures*, Providence, Rhode Island, United States, August 7th, 2001.
- Static and kinetic geometric spanners with applications. *12th Annual ACM-SIAM Symposium on Discrete Algorithms*, Washington, D.C., United States, January 7th, 2001.
- Interval methods for kinetic simulations. *15th Annual ACM Symposium on Computational Geometry*, Miami, Florida, United States, June 15th, 1999.

Poster Presentations

- Guarding curvilinear art galleries with edge or mobile guards. *2008 ACM Symposium on Solid and Physical Modeling*, Stony Brook University, Stony Brook, New York, United States, 2008.

Seminars

- Qualitative Symbolic Perturbations. *Séminaire algorithmique du plateau de Saclay*, École Polytechnique, Palaiseau, France, June 7th, 2013.
- Towards an upper bound theorem for the Minkowski sum of convex polytopes. *Séminaire GT Combi du LIX*, École Polytechnique, Palaiseau, France, May 27th, 2013.

- Exact bounds on the number of faces of the Minkowski sum of convex polytopes. *Stanford University*, Stanford, California, United States, July 31st, 2012.
- The maximum number of faces of the Minkowski sum of two convex polytopes. *École Normale Supérieure*, Paris, France, December 13th, 2011.
- The maximum number of faces of the Minkowski sum of two convex polytopes. *INRIA Sophia Antipolis – Méditerranée*, Sophia-Antipolis, France, September 19th, 2011.
- On the combinatorial complexity of Euclidean Voronoi cells and convex hulls of d-dimensional spheres. Discrete Mathematics Seminar, *University of Crete*, Heraklion, Greece, November 15th, 2005.
- Roots of polynomials: computation and representation. *University of Athens*, Athens, Greece, October 23rd, 2003.
- Voronoi diagrams for curved objects in the plane. *University of Crete*, Heraklion, Greece, October 21st, 2003.
- The Apollonius Diagram: From Algorithm to Implementation. *University of Notre Dame*, Notre Dame, Indiana, United States, January 30th, 2003.
- Voronoi diagrams for convex objects in the plane. *National Technical University of Athens & University of Athens*, Athens, Greece, October 8th, 2002.
- Computing the planar additively weighted Voronoi diagram dynamically. *INRIA Sophia-Antipolis*, Sophia-Antipolis, France, February 25th, 2002.
- Proximity structures for moving objects. *University of Notre Dame*, Notre Dame, Indiana, United States, March 28th, 2001.
- Proximity structures for moving objects. *Texas A & M University*, College Station, Texas, United States, March 21st, 2001.
- Proximity structures for moving objects. *University of Miami*, Miami, Florida, United States, March 19th, 2001.
- Proximity structures for moving objects. *University of South Carolina*, Columbia, South Carolina, United States, March 2nd, 2001.

Interviews

- The maximum number of faces of the Minkowski sum of convex polytopes. Interviewed by Zvi Lotker.
URL: <http://www.abstract-talk.org/wp/?p=213>

MENELAOS I. KARAVELAS

LIST OF PUBLICATIONS

Edited Proceedings

- [E1] Ioannis Z. Emiris, Menelaos I. Karavelas and Leonidas Palios, editors. *Proceedings of the 22nd European Workshop on Computational Geometry*, Delphi, Greece, March 27–29, 2006.
- [E2] Menelaos I. Karavelas and Monique Teillaud, editors. *Book of Abstracts of the Minisymposium on Publicly Available Geometric/Topological Software*, Chapel Hill, NC, United States, June 17 & 19, 2012.

Book Chapters

- [B1] Pierre Alliez, Christophe Delage, Menelaos I. Karavelas, Sylvain Pion, Monique Teillaud and Mariette Yvinec. Delaunay Tessellations and Voronoi Diagrams in CGAL. In *Tessellations in the Sciences: Virtues, Techniques and Applications of Geometric Tilings*, R. van de Weijgaert, G. Vegter, J. Ritzerveld, and V. Icke, editors, Springer. Accepted.

Papers in Refereed Journals

- [J1] P. D. Kaklis and M. I. Karavelas. Shape-preserving interpolation in \mathbb{R}^3 . *IMA Journal of Numerical Analysis*, 17(3):373–419, June 1997.
DOI: [10.1093/imanum/17.3.373](https://doi.org/10.1093/imanum/17.3.373)
- [J2] M. I. Karavelas and P. D. Kaklis. Spatial shape-preserving interpolation using v -splines. *Numerical Algorithms*, 23(2-3):217–250, June 2000.
DOI: [10.1023/A:1019156202082](https://doi.org/10.1023/A:1019156202082)
- [J3] Siome Goldenstein, Menelaos Karavelas, Dimitris Metaxas, Leonidas Guibas, Eric Aaron, and Ambarish Goswami. Scalable Nonlinear Dynamical Systems for Agent Steering and Crowd Simulation. *Computers & Graphics*, 25(6):983–998, December 2001.
DOI: [10.1016/S0097-8493\(01\)00153-4](https://doi.org/10.1016/S0097-8493(01)00153-4)
- [J4] M. I. Karavelas, P. D. Kaklis, and K. V. Kostas. Bounding the distance between 2D parametric Bézier curves and their control polygon. *Computing*, 72(1-2):117–128, April 2004.
DOI: [10.1007/s00607-003-0051-1](https://doi.org/10.1007/s00607-003-0051-1)
- [J5] Ioannis Z. Emiris and Menelaos I. Karavelas. The predicates of the Apollonius diagram: algorithmic analysis and implementation. *Computational Geometry: Theory and Applications*, 33(1-2):18–57, January 2006. Special Issue on Robust Geometric Algorithms and their Implementations.
DOI: [10.1016/j.comgeo.2004.02.006](https://doi.org/10.1016/j.comgeo.2004.02.006)
- [J6] N. C. Gabrielides, A. I. Ginnis, P. D. Kaklis, and M. I. Karavelas. G^1 -smooth Branching Surface Construction from Cross Sections. *Computer-Aided Design*, 39(8):639–651, August 2007.
DOI: [10.1016/j.cad.2007.05.004](https://doi.org/10.1016/j.cad.2007.05.004)
- [J7] Daniel Russel, Menelaos I. Karavelas and Leonidas J. Guibas. A package for Exact Kinetic Data Structures and Sweepline Algorithms. *Computational Geometry: Theory and Applications*, 38(1-2):111–127, September 2007. Special Issue on CGAL.
DOI: [10.1016/j.comgeo.2006.11.006](https://doi.org/10.1016/j.comgeo.2006.11.006)
- [J8] Menelaos I. Karavelas, Csaba D. Tóth, and Elias P. Tsigaridas. Guarding curvilinear art galleries with vertex or point guards. *Computational Geometry: Theory and Applications*, 42(6-7):522–535, August 2009.
DOI: [10.1016/j.comgeo.2008.11.002](https://doi.org/10.1016/j.comgeo.2008.11.002)

- [J9] Menelaos I. Karavelas. Guarding curvilinear art galleries with edge or mobile guards via 2-dominance of triangulation graphs. *Computational Geometry: Theory and Applications*, 44(1):20–51, January 2011.
DOI: [10.1016/j.comgeo.2010.07.002](https://doi.org/10.1016/j.comgeo.2010.07.002)
- [J10] Menelaos I. Karavelas, Raimund Seidel, and Eleni Tzanaki. Convex hulls of spheres and convex hulls of disjoint convex polytopes. *Computational Geometry: Theory and Applications*, 46(6):615–630, August 2013.
DOI: [10.1016/j.comgeo.2013.02.001](https://doi.org/10.1016/j.comgeo.2013.02.001)

Papers in Refereed Conferences

- [C1] Leonidas J. Guibas and Menelaos I. Karavelas. Interval methods for kinetic simulations. In *Proceedings of the 15th Annual ACM Symposium on Computational Geometry (SCG'99)*, pages 255–264, Miami Beach, Florida, United States, June 13–16, 1999.
DOI: [10.1145/304893.304978](https://doi.org/10.1145/304893.304978)
- [C2] Menelaos I. Karavelas and Leonidas J. Guibas. Static and kinetic geometric spanners with applications. In *Proceedings of the 12th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA'01)*, pages 168–176, Washington, D.C., United States, January 7–9, 2001.
ACM DOI: [10.1145/365411.365441](https://doi.org/10.1145/365411.365441)
- [C3] Siome Goldenstein, Menelaos Karavelas, Dimitris Metaxas, Leonidas Guibas, and Ambarish Goswami. Scalable dynamical systems for multi-agent steering and simulation. In *Proceedings of the 2001 IEEE International Conference on Robotics and Automation (ICRA'01)*, volume 4, pages 3973–3980, Seoul, Korea, May 21–26, 2001.
- [C4] Menelaos I. Karavelas. Voronoi diagrams for moving disks and applications. In *Proceedings of the 7th International Workshop on Algorithms and Data Structures (WADS'01)*, volume 2125 of *LNCS*, pages 62–74, Providence, Rhode Island, United States, August 8–10, 2001.
DOI: [10.1007/3-540-44634-6_7](https://doi.org/10.1007/3-540-44634-6_7)
- [C5] Menelaos I. Karavelas and Mariette Yvinec. Dynamic additively weighted Voronoi diagrams in 2D. In *Proceedings of the 10th European Symposium on Algorithms (ESA'02)*, volume 2461 of *LNCS*, pages 586–598, Rome, Italy, September 17–21, 2002.
DOI: [10.1007/3-540-45749-6_52](https://doi.org/10.1007/3-540-45749-6_52)
- [C6] Menelaos I. Karavelas and Ioannis Z. Emiris. Root comparison techniques applied to computing the additively weighted Voronoi diagram. In *Proceedings of the 14th ACM-SIAM Symposium on Discrete Algorithms (SODA'03)*, pages 320–329, Baltimore, Maryland, United States, January 12–14, 2003.
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