Curriculum Vitae

Ulderico Fugacci

Personal



Education

- **B.Sc. (Mathematics).** University of Genova, Department of Mathematics.
  Thesis: *Ideals of the Ring of Formal Power Series.*
  Advisor: Prof. M. E. Rossi. (September 2010)
- **M.Sc. (Mathematics).** University of Genova, Department of Mathematics.
  Thesis: *Constructive Methods to Compute Simplicial Homology.*
  Advisors: Prof. M. E. Rossi, Prof. L. De Floriani. (July 2012)
- **Ph.D. (Computer Science).** University of Genova, Department of Computer Science, Bioinformatics, Robotics and Systems Engineering.
  Thesis: *Topological Data Analysis through Homology and Discrete Morse Theory.*
  Advisors: Prof. L. De Floriani, Prof. M. E. Rossi. (May 2016)

Employments

- **September 2020 - Present.** Contract Professor, University of Genova, Italy.
- **July 2020 - Present.** Researcher (III level) at Istituto di Matematica Applicata e Tecnologie Informatiche (IMATI) "Enrico Magenes", CNR (National Research Council), Genova, Italy.
- **July 2019 - June 2020.** Post-doctoral fellow at Department of Mathematical Sciences and Collaborator of SmartData@PoliTO center for Big Data and Machine Learning technologies, Polytechnic University of Torino, Italy.

- **November 2017 - June 2019.** Post-doctoral fellow, Institute of Geometry, Graz University of Technology, Austria.
- **November 2016 - October 2017.** Post-doctoral fellow, Department of Computer Science, Kaiserslautern University of Technology, Germany.
- **March 2016 - October 2016.** Post-doctoral fellow, Department of Computer Science, University of Maryland at College Park, MD, USA.
- **April 2016 - May 2016.** External collaborator, Department of Mathematics, University of Genova, Italy.
- **January 2013 - February 2016.** Research assistant, Department of Computer Science, Bioinformatics, Robotics and Systems Engineering, University of Genova, Italy.

Research Interests

- Topological Data Analysis and Visualization
- Computational Topology and Geometry
- Homology, Persistent and Multi-Parameter Persistent Homology
- Discrete Morse Theory
- Complex Network Analysis
- Algorithms and Spatial Data Structures
- Bioinformatics (Protein Classification, Binding Site Retrieval)
- Combinatorics and Commutative Algebra

Publications

Papers in Refereed Journals

1. **M. Guerra, G. Palmieri, A. Ranieri, U. Fugacci, S. Biasotti, et al.** *SHREC 2025: Protein Surface Shape Retrieval Including Electrostatic Potential.* In Computers & Graphics, vol. 132, pages 104394, 2025.
2. **G. Luciano, U. Fugacci, S. Biasotti.** *pyCAST, a Python Package for the Detection of Cavities on Surface Proteins.* In Computational and Structural Biotechnology Journal, vol. 27, pages 3589-3597, 2025.
3. **U. Fugacci, C. Romanengo, B. Falcidieno, S. Biasotti.** *Reconstruction and Preservation of Feature Curves in 3D Point Cloud Processing.* In Computer-Aided Design, vol. 167, page 103649, 2024.

4. **C. Romanengo, U. Fugacci, B. Falcidieno, S. Biasotti.** *Piecewise Polynomial Approximation of Spatial Curvilinear Profiles using the Hough Transform.* In Applied Mathematics and Computation, vol. 456, page 128213, 2023.

5. **A. Raffo, U. Fugacci, S. Biasotti.** *GEO-Nav: a Geometric Dataset of Voltage-Gated Sodium Channels.* In Computers & Graphics, vol. 11,5 pages 285-295, 2023.

6. **U. Fugacci, M. Kerber, A. Rolle.** *Compression for 2-Parameter Persistent Homology.* In Computational Geometry, page 101940, 2022.

7. **A. Raffo, L. Gagliardi, U. Fugacci, L. Sagresti, S. Grandinetti, G. Brancato, S. Biasotti, W. Rocchia.** *Chanalyzer: a Computational Geometry Approach for the Analysis of Protein Channel Shape and Dynamics.* In Frontiers in Molecular Biosciences, vol. 9, 2022.

8. **L. Gagliardi, A. Raffo, U. Fugacci, S. Biasotti, W. Rocchia, et al.** *SHREC 2022: Protein-Ligand Binding Site Recognition.* In Computers & Graphics, vol. 107, pages 20-31, 2022.

9. **A. Raffo, U. Fugacci, S. Biasotti, W. Rocchia, et al.** *SHREC 2021: Retrieval and Classification of Protein Surfaces Equipped with Physical and Chemical Properties.* In Computers & Graphics, vol. 99, pages 1-21, 2021.

10. **M. Ferrara, F. Della Santa, M. Bilardo, A. De Gregorio, A. Mastropietro, U. Fugacci, F. Vaccarino, E. Fabrizio.** *Design Optimization of Renewable Energy Systems for NZEBs based on Deep Residual Learning.* In Renewable Energy, vol. 176, pages 590-605, 2021.

11. **M. Guerra, A. De Gregorio, U. Fugacci, G. Petri, F. Vaccarino.** *Homological Scaffold via Minimal Homology Bases.* In Scientific Reports, vol. 11(1), page 5355, 2021.

12. **U. Fugacci, C. Landi, H. Varlı.** *Critical Sets of PL and Discrete Morse Theory: a Correspondence.* In Computers & Graphics, vol. 90, pages 43-50, 2020.

13. **R. Fellegara, F. Iuricich, L. De Floriani, U. Fugacci.** *Efficient Homology-Preserving Simplification of High-Dimensional Simplicial Shapes.* In Computer Graphics Forum, vol. 39(1), pages 244-259, 2020.

14. **D. Bolognini, U. Fugacci.** *Betti Splitting from a Topological Point of View.* In Journal of Algebra and Its Applications, vol. 19(6), page 2050116, 2020.

15. **R. Corbet, U. Fugacci, M. Kerber, C. Landi, B. Wang.** *A Kernel for Multi-Parameter Persistent Homology.* In Computers & Graphics, vol. 2, page 100005, 2019.

16. **U. Fugacci, F. Iuricich, L. De Floriani.** *Computing Discrete Morse Complexes from Simplicial Complexes.* In Graphical Models, vol. 103, page 101023, 2019.

17. **B. Rieck, U. Fugacci, J. Lukasczyk, H. Leitte.** *Clique Community Persistence: A Topological Visual Analysis Approach for Complex Networks.* In IEEE Transactions on Visualization and Computer Graphics, vol. 24(1), pages 822-831, 2018.

18. **F. Iuricich, U. Fugacci, L. De Floriani.** *Topologically-Consistent Simplification of Discrete Morse Complex.* In Computers & Graphics, vol. 51, pages 157-166, 2015.

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

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

Refereed Book Chapters

1. **F. Vaccarino, U. Fugacci, S. Scaramuccia.** *Persistent Homology: aÂ Topological Tool forÂ Higher-Interaction Systems.* In F. Battiston, G. Petri (Eds.), Higher-Order Systems. Springer International Publishing, pages 97-139, 2022.

2. **L. De Floriani, U. Fugacci, F. Iuricich.** *Homological Shape Analysis through Discrete Morse Theory.* In M. Breuß, A. Bruckstein, P. Maragos, S. Wuhrer (Eds.), Perspectives in Shape Analysis. Springer International Publishing, pages 187-209, 2016.

Refereed Conference Papers

1. **A. Di Via, R. Di Via, U. Fugacci.** *Persistent Homology vs. Learning Methods: A Comparative Study in Limited Data Scenarios.* A. Caputo, V. Garro, A. Giachetti, U. Castellani, T.G. Dulecha (Eds.). In Smart Tools and Applications in Graphics - Eurographics Italian Chapter Conference, The Eurographics Association, 2024.

2. **U. Fugacci, M. Kerber, H. Manet.** *Topology-Preserving Terrain Simplification.* In 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, pages 36-47, 2020.

3. **F. Della Santa, M. Ferrara, M. Bilardo, A. De Gregorio, U. Fugacci, A. Mastropietro, E. Fabrizio, F. Vaccarino.** *Application of Deep Learning to Design Renewable Energy Systems for a Zero Energy Multifamily Building.* In 15th Conference on Sustainable Development of Energy, Water and Environment Systems, 2020.

4. **U. Fugacci, M. Kerber.** *Chunk Reduction for Multi-Parameter Persistent Homology.* In 35th International Symposium on Computational Geometry, vol. 129, pages 37:1-37:14, 2019.

5. **R. Fellegara, U. Fugacci, F. Iuricich, L. De Floriani.** *Analysis of Geolocalized Social Networks based on Simplicial Complexes.* In 9th ACM SIGSPATIAL International Workshop on Location-Based Social Networks, pages 5:1-5:8, 2016.

6. **U. Fugacci, S. Scaramuccia, F. Iuricich, L. De Floriani.** *Persistent Homology: a Step-by-Step Introduction for Newcomers.* G. Pintore and F. Stanco (Eds.). In Smart Tools and Applications in Graphics - Eurographics Italian Chapter Conference, The Eurographics Association, 2016.

7. **U. Fugacci, F. Iuricich, L. De Floriani.** *Efficient Computation of Simplicial Homology through Acyclic Matching.* In 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, pages 587-593, 2014.

Communications at International Conferences and Workshops

1. **I. Mastroianni, M. Guerra, U. Fugacci, E. De Negri.** *Hook-Decomposable Modules and their Resolutions.* Extended Abstract, Computational Geometry: Young Researchers Forum, 2026.
2. **U. Fugacci, M. Kerber, H. Manet.** *Topology-Aware Terrain Simplification*:
   (a) Poster, Algebraic Topology: Methods, Computation and Science, 2018.
   (b) Extended Abstract, Computational Geometry: Young Researchers Forum, 2018.
3. **R. Corbet, U. Fugacci, M. Kerber, C. Landi, B. Wang.** *A Kernel for Multi-Parameter Persistent Homology*:
   (a) Poster, Algebraic Topology: Methods, Computation and Science, 2018.
   (b) Extended Abstract, Computational Geometry: Young Researchers Forum, 2018.

On-Going Papers

1. **G. Bolognesi, C. Estatico, U. Fugacci, I. Mastroianni, C. Muselli, L. Oneto.** *LARAG: Link-Aware Retrieval Strategy for RAG Systems in Hyperlinked Technical Documentation.* Preprint available at arXiv.org.
2. **F. Conti, P. Frosini, U. Fugacci, E. M. García, N. Quercioli, S. Scaramuccia, F. Tombari.** *The Convex Matching Distance in Multiparameter Persistence.* Preprint available at arXiv.org.
3. **I. Mastroianni, U. Fugacci.** *Topological Correlation.* Preprint available at arXiv.org.
4. **I. Mastroianni, M. Guerra, U. Fugacci, E. De Negri.** *Retrieving Biparameter Persistence Modules from Monoparameter Ones: a Characterization of Hook-Decomposable Persistence Modules.* Preprint available at arXiv.org.
5. **A. De Gregorio, U. Fugacci, F. Mémoli, F. Vaccarino.** *On the Notion of Weak Isometry for Finite Metric Spaces.* Preprint available at arXiv.org.

Awards

- SMI 2015 - **Honorable Mention**, *Topologically-Consistent Simplification of Discrete Morse Complex* (joint work with F. Iuricich and L. De Floriani).
- **2016 Best Ph.D. Thesis in Computer Science**, University of Genova.

- SMI 2019 - **Best Paper**, *A Kernel for Multi-Parameter Persistent Homology* (joint work with R. Corbet, M. Kerber, C. Landi, B. Wang).

Participations in Research Projects

- Mesh-Based Representation and Topological Analysis of Static and Time-varying 3D Scalar Fields and 4D Shapes (NSF project IIS-1116747).
- Commutative Algebra and Applications (project CARIGE).
- Algorithms for Topological Data Analysis (Austrian Science Fund (FWF) - grant P29984-N35).
- Italian MIUR Award "Dipartimento di Eccellenza 2018-2022" Disma-PoliTO - CUP: E11G18000350001
- ELBA, Establishment of Training and Research Centers and Courses Development on Intelligent Big Data Analysis in Central Asia.
- PNRR - Ecosistema dell'Innovazione RAISE - Robotics and AI for Socio-Economic Empowerment.
- PNRR - National Biodiversity Future Center (NBFC).

Professional Service

Participations in Program Committees

- Graphics Replicability Stamp Initiative (GRSI), since 2022.
- IEEE Workshop on Topological Data Analysis and Visualization (TopoInVis), since 2023.
- Symposium on 3D Object Retrieval (3DOR), since 2023, in 2023 also member of Program Chair and Best Paper Award Commitee.
- Smart Tools and Applications in Graphics (STAG), Thesis Awards Chair, 2024 and 2025.

Reviewing Activity

- ACM Transactions on Spatial Algorithms and Systems (TSAS), 2017.
- International Symposium on Computational Geometry (SoCG), 2018.
- Annual European Symposium on Algorithms (ESA), 2018.
- International Workshop on Combinatorial Image Analysis (IWCIA), 2018, 2020.
- International Conference on Algebra and Related Topics (ICART), Special issue of the Journal Algebra Colloquium, 2018.

- Proceedings of the Royal Society A (RSPA), 2019.
- Journal of Computational Geometry (JoCG), 2019, 2020.
- Statistics in Transition New Series (SiT), 2019.
- International Symposium on Computational Geometry (SoCG) 2020.
- Graphical Models (GMOD), 2020, 2021.
- Symmetry, 2020, 2021.
- Algorithms, 2020, 2021.
- Transactions in GIS, 2021.
- Computer & Graphics, 2021.
- Computer-Aided Design, 2021.
- Mathematics, 2021.
- IEEE Pacific Visualization Symposium (PacificVis), 2021.
- Solid and Physical Modeling (SPM), 2021.
- Graphics Replicability Stamp Initiative (GRSI), 2022.

Organization of Scientific Events

- Local organizer for the School "Homology: Theoretical and Computational Aspects", International School, jointly organized by the Department of Computer Science, Bioinformatics, Robotics and Systems Engineering and by the Department of Mathematics of the University Genova, February 2015.
- Organizer of the session on "Geometric Aspects of Applied Topology" at the Joint Meeting of UMI-SIMAI-PTM, Wrocław, Poland, September 2018.
- Organizer of the "6th SmartData@PoliTO Workshop" at Castello del Valentino, Torino, Italy, January 2020.
- Organizer of the "10th Annual Minisymposium on Computational Topology" workshop of the Computational Geometry Week 2022, Berlin, Germany, June 2022.
- Organizer of the "Symposium on 3D Object Retrieval (3DOR'23)", Lille, France, August-September 2023

Organization of Scientific Contests and Tracks

- Organizer of the SHREC track "Retrieval and Classification of Protein Surfaces Equipped with Physical & Chemical Properties", 2021.

- Organizer of the SHREC track "Protein-Ligand Binding Site Recognition", 2022.

Courses and Talks in Conferences and International Schools

Courses and Seminars in International Schools

- Invited lecturer of the course *Persistent Homology: from Theory to Applications* (3 lectures + 1 lab session) given at "Persistent Homology" Summer School, Rabat, Morocco, July 2017.

Presentations and Talks in International Venues

- *Efficient Computation of Simplicial Homology through Acyclic Matching*, presented at CTIC 2014, Computational Topology in Image Context at SYNASC 2014, West University of Timisoara, Romania, September 2014.
- *Topologically-Consistent Simplification of Discrete Morse Complex*, presented at SMI 2015, Shape Modeling International, Lille 1 University, France, June 2015.
- *Efficient Computation of Persistence Homology through Discrete Morse Theory*, presented at CAT-School 2015, Computational Algebraic Topology, University of Oxford, UK, September 2015.
- *Topological Data Analysis through Homology and Discrete Morse Theory*, presented at Kaiserslautern University of Technology, Germany, May 2016.
- *Persistent Homology: a Step-by-Step Introduction for Newcomers*, presented at STAG 2016, Smart Tools and Apps for Graphics, Genova, Italy, October 2016.
- *Homology and Discrete Morse Theory in Topological Data Analysis*, presented at Graz University of Technology, Austria, February 2017.
- *Clique Community Persistence: A Topological Visual Analysis Approach for Complex Networks*, presented at SciVis, IEEE VIS 2017, Phoenix, AZ, USA, October 2017.
- *Topology-Aware Terrain Simplification*, presented at YRF - SoCG 2018, 34th International Symposium on Computational Geometry, Budapest, Hungary, June 2018.
- *A Kernel for Multi-Parameter Persistent Homology*, poster presented at ATMCS8, Algebraic Topology: Methods, Computation and Science, Klosterneuburg, Austria, June 2018.
- *Topology-Based Tools for Data Classification*, presented at Polytechnic University of Torino, Italy, December 2018.
- *Limits and New Perspectives in Topological Data Analysis*, presented at Paris Diderot University, France, January 2019.

- *Topological Data Analysis: Application-Driven Strategies for Compactness and Efficiency*, presented at SmartData@PoliTO - Polytechnic University of Torino, Italy, April 2019.
- *Chunk Reduction for Multi-Parameter Persistent Homology*, presented at SoCG 2019, 35th International Symposium on Computational Geometry, Portland, OR, USA, June 2019.
- *Topological Tools in Data Analysis*, presented at 5th SmartData@PoliTO Workshop, Barolo, Italy, September 2019.
- *Persistence-Based Kernels for Data Classification*, presented at Complex Simplex: Topological and Network Data Science Workshop, Torino, Italy, October 2019.
- *On the encoding of large, high-dimensional, and unorganized datasets*, presented at 6th SmartData@PoliTO Workshop, Torino, Italy, January 2020.
- *Critical Sets of PL and Discrete Morse Theory: a Correspondence*, presented at SMI 2020, Shape Modeling International, Strasbourg, France (remote conference), June 2020.
- *Topological tools for Network Description*, keynote speech at TopoNets 2020 - Networks beyond pairwise interactions, Satellite @ NetSci 2020, Roma, Italy (remote conference), September 2020.
- *Topology-Preserving Terrain Simplification*, presented at 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Seattle, WA, USA (remote conference), November 2020.
- *SHREC 2022: Protein-Ligand Binding Site Recognition*, presented at 3DOR 2022, Symposium on 3D Object Retrieval, Firenze, Italy, September 2022.

Participations in Conferences, Workshops and Schools

2011

- MONICA 2011, MONomial Ideals, Computations and Applications, Castro Urdiales, Spain. (July 2011)

2012

- VisMac 2012, School on Machine Vision, Genova, Italy. (October 2012)

2013

- BiSS 2013, Bertinoro international Spring School, Bertinoro, Italy. (March 2013)
- EACA's Second International School On Computer Algebra and Applications, Valladolid, Spain. (June 2013)

– ACAT's Summer School on Computational Topology and Topological Data Analysis, Ljubljana, Slovenia. (July 2013)
– INdAM Meeting CoMeTA 2013, Combinatorial Methods in Topology and Algebra, Cortona, Italy. (September 2013)

2014

– IMA Annual Program Year Workshop, Topology and Geometry of Networks and Discrete Metric Spaces, Minneapolis, MN, USA. (April-May 2014)
– VisMac 2014, Summer School on Computer Vision and Pattern Recognition for Homeland Security, Marina di Ascea, Italy. (June 2014)
– SYNASC 2014, International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, Timisoara, Romania. (September 2014)

2015

– HTCA-2015 International School, Homology: Theoretical and Computational Aspects, Genova, Italy. (February 2015)
– SMI 2015, Shape Modeling International, Lille, France. (June 2015)
– CAT-School 2015, Computational Algebraic Topology; ATI scoping workshop, Topological Data Analysis, Oxford, UK. (September 2015)
– Incontro di Algebra Commutativa, Genova, Italy. (October 2015)

2016

– SoCG 2016, 32th International Symposium on Computational Geometry, Boston, MA, USA. (June 2016)
– STAG 2016, Smart Tools and Apps for Graphics, Genova, Italy. (October 2016)

2017

– "Persistent Homology" Summer School, Rabat, Morocco. (July 2017)
– IEEE VIS 2017, Phoenix, AZ, USA. (October 2017)

2018

– TAGS, Linking Topology to Algebraic Geometry and Statistics, Leipzig, Germany. (February 2018)
– SoCG 2018, 34th International Symposium on Computational Geometry, Budapest, Hungary. (June 2018)
– ATMCS8, Algebraic Topology: Methods, Computation and Science, Klosterneuburg, Austria. (June 2018)
– Joint Meeting of UMI-SIMAI-PTM, Wrocław, Poland. (September 2018)

2019

- East Austria Topological Data Analysis Meeting, Graz, Austria. (January 2019)
- SoCG 2019, 35th International Symposium on Computational Geometry, Portland, OR, USA. (June 2019)
- ÖMG Conference 2019, Dornbirn, Austria. (September 2019)
- 5th SmartData@PoliTO Workshop, Barolo, Italy. (September 2019)
- Complex Simplex: Topological and Network Data Science Workshop, Torino, Italy. (October 2019)

2020

- 6th SmartData@PoliTO Workshop, Torino, Italy. (January 2020)
- SMI 2020, Shape Modeling International, Strasbourg, France (remote conference). (June 2020)
- SGP 2020, Symposium on Geometry Processing, Utrecht, Netherland (remote conference). (July 2020)
- TopoNets 2020 - Networks beyond pairwise interactions, Satellite @ NetSci 2020, Roma, Italy (remote conference). (September 2020)
- ACM SIGSPATIAL 2020, 28th International Conference on Advances in Geographic Information Systems, Seattle, WA, USA (remote conference). (November 2020)
- STAG 2020, Smart Tools and Apps for Graphics, Firenze, Italy (remote conference). (November 2020)

2021

- Eurographics 2022, 42nd Annual Conference of the European Association for Computer Graphics, Vienna, Austria (remote conference). (May 2021)
- 3DOR'21, 14th EG Workshop on 3D Object Retrieval (remote conference). (September 2021)
- Meet in Italy for Life Sciences, Genova, Italy. (September-October 2021)
- STAG 2021, Smart Tools and Apps for Graphics, Roma, Italy (remote conference). (October 2021)
- SMI 2021, Shape Modeling International (remote conference). (November 2021)

2022

- SoCG 2022, 38th International Symposium on Computational Geometry, Berlin, Germany. (June 2022)
- 3DOR 2022, Symposium on 3D Object Retrieval, Firenze, Italy. (September 2022)

Short Visits

- April 2014 and October-December 2014, University of Maryland, MD, USA.
- April 2016, University of Miami, FL, USA.
- May 2016, Kaiserslautern University of Technology, Germany.
- February 2017 and November 2019, Graz University of Technology, Austria.
- December 2018 and April 2019, Polytechnic University of Torino, Italy.
- January 2019, Paris Diderot University, France.
- May 2022, University of Trento, Italy.

Teaching and Advising Activity

At CNR-IMATI

- Advisor of the Internship of Dorian Roger, April-July 2024.

At University of Genova

- Tutor, Elementi di Matematica e Logica, Undergraduate Program in Computer Science, 2011-2012.
- Guest lecturer, Geometric Modeling, Master Program in Computer Science and Mathematics, 2012-2013, 2013-2014, and 2014-2015.
- Assistant tutor for Master Thesis in Mathematics by Beatrice Roticiani, advisor Prof. L. De Floriani, September 2013.
- Lecturer at Mathematics stage for High School students, February 2014.
- Assistant tutor for Master Thesis in Mathematics by Simone Rubino, advisor Prof. L. De Floriani, February 2014.
- Tutor for Mathematics and Physics Undergraduate Students, 2013-2014.
- Assistant tutor for Master Thesis in Mathematics by Lisa Chiang, advisors Dr. F. Giannini and Dr. M. Monti, March 2015.
- Teaching assistant, Elementi di Matematica e Logica, Undergraduate Program in Computer Science, 2015-2016.
- Instructor, Topology-Based Data Analysis and Visualization, Ph.D. Program in Computer Science, 2017-2018.

- Instructor, Geometria e Applicazioni della Teoria dei Grafi, Scuola Superiore IANUA-ISSUGE, 2020.
- Instructor, Analisi Matematica I (from A.Y. 2024-2025, splitted in two courses: IA and IB), Undergraduate Program in Electrical Engineering, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026.
- Instructor, Topological Data Analysis, Ph.D. Program in Mathematics, 2020-2021.
- Instructor, Matematica Discreta e Applicazioni, Master Program in Mathematics, 2021-2022, 2022-2023, 2023-2024, 2024-2025.
- Instructor, Extracting Geometrical Features from Data, Master Program in Mathematics, 2025-2026.
- Advisor for Bachelor Thesis in Mathematics by Francesca Bertoglio, co-advised with Prof. A. Perego, November 2022.
- Advisor for Bachelor Thesis in Mathematics by Andrea Di Via, co-advised with Prof. M. Penegini, July 2023.
- Advisor for Master Thesis in Mathematics by Isabella Mastroianni, September 2024.
- Advisor for Bachelor Thesis in Mathematics by Paolo Codda, September 2025.
- Advisor for Master Thesis in Mathematics by Andrea Di Via, co-advised with Dr. C. Muselli, July 2026 (expected).
- Advisor for Master Thesis in Mathematics by Sara Buscaglia, co-advised with Prof. E. De Negri, July 2026 (expected).
- Advisor for Ph.D. Thesis in Mathematics by Sofia Grondona co-advised with Dr. G. Fiorito and Dr. D. Poletti, (started in January 2025).
- Advisor for Ph.D. Thesis in Mathematics by Isabella Mastroianni, co-advised with Prof. C. Estatico and Dr. C. Muselli, (started in January 2026).

At Kaiserslautern University of Technology

- Guest lecturer, Computational Geometry, Master Program in Applied Computer Science, 2016-2017.
- Guest lecturer, Visual Analytics, Master Program in Applied Computer Science, 2016-2017.
- Co-advisor for Master Thesis in Computer Science by Jan Stärz, co-advised with Prof. H. Leitte, September 2017.

At Graz University of Technology

- Co-advisor of the Internship of Hugo Manet, April-August 2018.
- Instructor, Knots and 3-Manifolds, Master Program in Mathematics, 2018-2019.

At Polytechnic University of Torino

- Instructor, Computational Linear Algebra for Large Scale Problems, Master Program in Data Science and Engineering and in Mathematical Engineering, 2019-2020.
- Instructor, Top Data Analysis, Ph.D. Program in Pure and Applied Mathematics (joint with University of Torino), 2019-2020.

At University of Torino

- Instructor, Top Data Analysis, Ph.D. Program in Pure and Applied Mathematics (joint with Polytechnic University of Torino), 2019-2020.
- Co-advisor for Master Thesis in Mathematics by Gianluca Zanetti, co-advised with Prof. G. Ruffo and Dr. S. Scaramuccia, April 2022.

Languages

- Italian, Mother Tongue
- English, Full Professional Proficiency
  - First Certificate (March 2007)
- German, Elementary Proficiency
  - A2.1 GeR (July 2017)

June 15, 2026

