



# UNIVERSITÀ DEGLI STUDI DELL'AQUILA

## Prof. Daniele Frigioni Curriculum scientifico

(Aggiornato il 2021/12/01)

### Posizioni ricoperte

1 Aprile 2020 - : Professore ordinario a tempo pieno presso l'Università dell'Aquila (settore scientifico disciplinare ING-INF/05 - Sistemi di elaborazione delle informazioni).

1 Ottobre 2018 - 15 Novembre 2021: Presidente del Consiglio di Area Didattica (CAD) della laurea triennale in Ingegneria dell'Informazione per il triennio 2018-2020, Università dell'Aquila.

4 Aprile 2017: Abilitazione scientifica nazionale per il ruolo di professore ordinario nel settore scientifico disciplinare ING-INF/05.

1 Ottobre 2005 - 31 Marzo 2020: Professore associato a tempo pieno presso l'Università dell'Aquila (settore scientifico disciplinare ING-INF/05 - Sistemi di elaborazione delle informazioni).

1 Novembre 2002 - 30 Settembre 2005: Ricercatore universitario presso l'Università dell'Aquila (settore scientifico disciplinare ING-INF/05 - Sistemi di elaborazione delle informazioni).

Aprile 2001 - Settembre 2002: Ricercatore a contratto presso il Dipartimento di Informatica e Sistemistica dell'Università di Roma "La Sapienza", nell'ambito del progetto EU ALCOM-FT (Prof. Giorgio Ausiello).

Settembre 1998 - Dicembre 2000: PostDoc (bandi n.201.15.9 del 16-9-96, n. 201.15.11 del 17-4-97 e n. 201.15.13 del 11-6-98) presso il Dipartimento di Informatica e Sistemistica dell'Università degli studi di Roma "La Sapienza", dove ha condotto ricerche nel gruppo del Prof. G. Ausiello.

Aprile 1997 - Agosto 1998: PostDoc (bando CNR n. 203.15.07 del 29-11-95 e bando CNR-NATO n. 215.29 del 16-5-96) presso il Max Plank Institut fur Informatik, Saarbruecken (Germania), dove ha condotto ricerche nel gruppo del Prof. K. Mehlhorn.

Novembre 1993 - Ottobre 1996: Dottorato di ricerca in Ricerca Operativa presso l'Università degli studi di Roma "La Sapienza" (relatore: Prof. A.Marchetti-Spaccamela). Ha sostenuto con esito positivo l'esame finale per il conseguimento del titolo di Dottore di Ricerca il 9 Luglio 1997.

Dicembre 1992: Laurea in Scienze dell'Informazione presso l'Università dell'Aquila con votazione 110/110 e lode.

### Attività scientifica

Ha svolto e svolge attività scientifica nell'ambito di svariati progetti di ricerca internazionali (AMANDA, ARRIVAL, AMORE, ALCOM-FT, ALCOM-IT, ALCOM) e nazionali in collaborazione con docenti e ricercatori di diverse sedi italiane ed estere. L'attività di ricerca è stata sviluppata principalmente in quattro settori: Algorithm Engineering; Large Scale Optimization; Spatial Databases; Information retrieval. Le pubblicazioni elencate nel seguito sono il frutto di tali collaborazioni.

## Elenco delle pubblicazioni

### **Volumi editi**

- D. Frigioni, S. Stiller. Algorithmic Approaches for Transportation Modelling, Optimization, and Systems. *Proceedings of the 13th Workshop (ATMOS2013)*, September 5, 2013, Sophia Antipolis, France. *OASICS*, vol. 33, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2013.
- G. S. Brodal, D. Frigioni, A. Marchetti-Spaccamela. Algorithm Engineering. *Proceedings of the 5th International Workshop (WAE 2001)*, Aarhus, Denmark, August 28-31, 2001. *Lecture Notes in Computer Science*, vol. 2141, Springer, 2001.

### **Capitoli di libri**

- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Navarra, M. Schachtebeck, A. Schoebel. Recoverable robustness in shunting and timetabling. *Robust and online large-scale optimization*, *Lecture Notes in Computer Science* n. 5868, pp. 28 - 60, Springer-Verlag, 2009.
  - G. D'Angelo, M. D'Emidio, D. Frigioni. Distance Vector Algorithms for Distributed Shortest Paths in Dynamic Networks. In Adamatzky, A. (Ed.) *Shortest path solvers. From software to wetware*. Series Emergence, Complexity and Computation , vol. 32, pp. 99-144, Springer, 2018.

### **Riviste Internazionali**

- S. Cicerone, M. D'Emidio, D. Frigioni, F. Tirabassi-Pascucci. Combining polygon schematization and decomposition approaches for solving the cavity decomposition problem. *ACM Transactions on Spatial Algorithms and Systems*, vol. 7, n.4 (2021), pp. 1-37, ACM.
- M. D'Emidio, I. Khan, D. Frigioni. Journey Planning Algorithms for Massive Delay-prone Transit Networks, *Algorithms*, vol. 13, n.1 (2020), Article n. 2, MDPI.
- F. Basciani, M. D'Emidio, D. Di Ruscio, D. Frigioni, L. Iovino, A. Pierantonio. Automated Selection of Optimal Model Transformation Chains via Shortest-Path Algorithms. *IEEE Transactions on Software Engineering*,

vol. 46, n.3 (2020), pp. 251-279, IEEE.

- M. D'Emidio, D. Frigioni. Algorithm Engineering: Towards Practically Efficient Solutions to Combinatorial Problems. *Algorithms*, vol. 11 n. 12, Article 229, MDPI, 2019.
- M. D'Emidio, L. Forlizzi, D. Frigioni, S. Leucci, G. Proietti. Hardness, Approximability and Fixed-parameter Tractability of the Clustered Shortest-path Tree Problem. *Journal of Combinatorial Optimization*, vol. 38 n.1, pp. 165-184, Springer, 2019.
- G. D'Angelo, M. D'Emidio, G. D. Frigioni. Fully Dynamic 2-Hop Cover Labeling. *ACM Journal of Experimental Algorithmics*, vol. 24, n.1, paper A6, ACM, 2019.
- M. D'Emidio, G. Di Stefano, D. Frigioni, A. Navarra. Characterizing the Computational Power of Mobile Robots on Graphs and Implications on the Euclidean Plane. *Information and Computation*, vol. 263 (2018) pp. 57-74, Elsevier.
- A. Cionini, G. D'Angelo, M. D'Emidio, D. Frigioni, K. Giannakopoulou, A. Paraskevopoulos, C. Zaroliagis. Engineering Graph-Based Models for Dynamic Timetable Information Systems. *Journal of Discrete Algorithms*, vol. 46-47 (2017), pp. 40-58, Elsevier.
- D. Romano, G. Antonini, M. D'Emidio, D. Frigioni, A. Mori, M. Bandinelli. Rigorous DC solution of Partial Elements Equivalent Circuits methods. *IEEE Transactions on Circuits and Systems-I: Regular Papers*, col. 63, n. 9 (2016), pp. 1499-1510, IEEE.
- M. D'Emidio, D. Frigioni, A. Navarra. Synchronous robots vs asynchronous light-enhanced robots on graphs. *Electronic notes in Theoretical Computer Science*, vol. 322 (2016), pp. 169-180, Elsevier.
- M. D'Emidio, D. Frigioni, A. Navarra. Explore and repair graphs with black holes using mobile entities. *Theoretical Computer Science*, vol. 605 (2015), pp. 129-145 Elsevier.
- G. D'Angelo, M. D'Emidio, D. Frigioni, D. Romano. Enhancing the computation of distributed shortest paths on power-law networks in dynamic scenarios *Theory of Computing Systems*, vol. 57, n. 2 (2015), pp. 444-477, Springer, 2015.

- A. D'Andrea, M. D'Emidio, D. Frigioni, S. Leucci, G. Proietti. Dynamic maintenance of a Shortest Path Tree on homogeneous batches of updates: New algorithms and experiments. *ACM Journal of Experimental Algorithmics*, vol 20, n. 1 (2015), Article 1.5, ACM.
- G. D'Angelo, M. D'Emidio, D. Frigioni. Fully dynamic update of Arc-Flags. *Networks*, vol. 63, n. 3, (2014), pp. 243-259, Wiley.
- G. D'Angelo, M. D'Emidio, D. Frigioni. A loop-free Shortest-path Routing Algorithm for Dynamic Networks. *Theoretical Computer Science*, vol. 516, (2014), pp. 1-19, Elsevier.
- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, V. Maurizio. Engineering a new algorithm for distributed shortest paths on dynamic networks. *Algorithmica*, vol. 66, n. 1 (2013), pp. 51-86, Springer.
- G. D'Angelo, M. D'Emidio, D. Frigioni. Pruning the computation of distributed shortest paths in power-law networks. *Informatica*, vol. 37, n. 3 (2013), pp. 253-265, Slovenian Soc. Informatika.
- G. D'Angelo, D. Frigioni, V. Maurizio. Dynamic update of minimum cost paths in computer networks. *International Journal of Management and Networks Economics*, vol. 1, issue 2 (2011), pp. 58-74, Inderscience Publishers.
- G. Antonini, D. Frigioni, G. Miscione. Hybrid Formulation of the Equation Systems of the 3-D PEEC Model Based on Graph Algorithms. *IEEE Transactions on Circuits and Systems*, vol. 57, issue 1 (2010), pp. 249-261, IEEE Press.
- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni. Partially Dynamic Efficient Algorithms for Distributed Shortest. *Theoretical Computer Science*, vol.411, issues 7-9 (2010), pp. 1013-1037, Elsevier Science.
- T. Di Mascio, D. Frigioni, L. Tarantino. VISTO:a New CBIR System for Vector Images. *Information Systems*, vol. 35 (2010), pp. 709-734, Elsevier Science.
- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Navarra. Robust Algorithms and Price of Robustness in Shunting Problems. *Algorithmic Operations Research*, vol. 4, n. 2 (2009), pp. 102-116.
- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Navarra. On the interaction between robust timetable planning and delay management. *Journal of Combinatorial Optimization*, vol. 18, no. 3 (2009), pp. 229-257, Springer.
- F. Bruera, S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni. Dynamic Multi-level Overlay Graphs for Shortest Paths. *Mathematics in Computer Science (MCS)*, Special Issue on Combinatorial Algorithms, vol. 1, n. 4 (2008), pp. 709 - 736, Birkhauser/Springer.
- S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Petricola. Partially Dynamic Algorithms for Distributed Shortest Paths and their Experimental Evaluation. *Journal of Computers*, vol. 2, n. 9 (2007), pp. 16-26, Academic Publisher.
- G. Ausiello, P. G. Franciosa, D. Frigioni. Partially Dynamic Maintenance of Minimum Weight Hyperpaths. *Journal of Discrete Algorithms*, vol. 3, n. 1 (2005), pp. 27-46, Elsevier Science.
- S. Cicerone, G. Di Stefano, D. Frigioni, U. Nanni. A Fully Dynamic Algorithm for Distributed Shortest Paths. *Theoretical Computer Science*, vol. 297 (2003), pp. 83-102, Elsevier Science.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Fully Dynamic Shortest Paths in Digraphs with Arbitrary Arc Weights. *Journal of Algorithms*, vol. 49, n. 1 (2003), pp. 86-113, Elsevier Science.
- D. Frigioni, L. Tarantino. Multiple Zooming in Geographic Maps. *Data and Knowledge*

Engineering, vol. 47, n. 2 (2003), pp.207--236, Elsevier Science.

- S. Cicerone, D. Frigioni, P. Di Felice. A General Strategy for Decomposing Topological Invariants of Spatial Databases and an Application. *Data and Knowledge Engineering*, vol. 42, n. 1 (2002), pp. 57-87, Elsevier Science.
- S. Cicerone, D. Frigioni, L. Tarantino. Exploration of Geographic Databases: Supporting a Focus plus Context Interaction Style. *Journal of Applied System Studies*, vol. 3, n. 2 (2002), pp.497-510. International Science Publishing.
- D. Frigioni, L. Tarantino, T. Di Mascio. On Formal Aspects of Zooming in Geographic Maps. *Informatica*, vol. 26, n. 3 (2002), pp. 309-319, Slovene Society Informatika.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Dynamic Algorithms for Classes of Constraint Satisfaction Problems. *Theoretical Computer Science*, vol. 259 (2001), pp. 287-305, Elsevier.
- D. Frigioni, T. Miller, U. Nanni, C. Zaroliagis. An Experimental Study of Dynamic Algorithms for Transitive Closure. *ACM Journal of Experimental Algorithmics*, vol. 6, Article 9 (2001), ACM.
- P. G. Franciosa, D. Frigioni, R. Giaccio. Semi Dynamic Breadth First Search in Digraphs. *Theoretical Computer Science*, vol. 250, n. 1 (2000), pp. 201-217, Elsevier Science.
- D. Frigioni, G. F. Italiano. Dynamically Switching Vertices in Planar Graphs. *Algorithmica*, vol. 28, n. 1 (2000), pp.76-103, Springer.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Fully Dynamic Algorithms for Maintaining Shortest Paths Trees. *Journal of Algorithms*, vol. 34, (2000), pp. 351-381, Academic Press.
- S. Cicerone, D. Frigioni, U. Nanni, F. Pugliese. A Uniform Approach to Semi Dynamic Problems in Digraphs. *Theoretical Computer Science*, vol. 203, n. 1 (1998), pp. 69-90, Elsevier Science.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Semi Dynamic Algorithms for Maintaining Single Source Shortest Paths Trees. *Algorithmica*, vol. 22, n. 3 (1998), pp. 250-274, Springer.
- D. Frigioni, M. Ioffreda, U. Nanni, G. Pasqualone. Experimental Analysis of Dynamic Algorithms for the Single Source Shortest Paths Problem. *ACM Journal of Experimental Algorithmics*, vol. 3, Article 5 (1998), ACM Press.

## Conferenze Internazionali

- M. D'Emidio, D. Frigioni. Distributed Shortest Paths on Power Law Networks in the Generalized Linear Preference Model: an Experimental Study. *Proceedings 19th International Conference on Computational Science and its Applications (ICCSA 2019)*. Lecture Notes in Computer Science n. 11620, pp. 72-81, Springer, 2019.
- Francesco Basciani, Mattia D'Emidio, Davide Di Ruscio, Daniele Frigioni, Ludovico Iovino and Alfonso Pierantonio. A tool for Automatically Selecting Optimal Model Transformation Chains. *Proceedings ACM/IEEE 21st International Conference on Model Driven Engineering Languages and Systems (MODELS 2018)*, Tools and Demonstration Track. ACM, pp. 2-6, 2018.
- Serafino Cicerone, Mattia D'Emidio and Daniele Frigioni. On Mining Distances in Large-Scale Dynamic Graphs. *Proceedings 19th Italian Conference on Theoretical Computer Science (ICTCS 2018)*. CEUR Workshop Proceedings, n. 2243, pp. 77-81, 2018.
- M. D'Emidio, G. Di Stefano, D. Frigioni, A. Navarra. Improved protocols for Asynchronous Luminous Robots. *Proceedings 17th Italian Conference in Theoretical Computer Science (ICTCS16)*, CEUR Workshop Proceedings, n. 1720, pp. 136-148, 2016.
- M. D'Emidio, L. Forlizzi, D. Frigioni, S. Leucci, G. Proietti. On the clustered shortest-path tree

problem. Proceedings 17th Italian Conference in Theoretical Computer Science (ICTCS16), CEUR Workshop Proceedings, n. 1720, pp. 263-268, 2016.

- G. D'Angelo, M. D'Emidio, D. Frigioni. Distance queries in large-scale fully dynamic complex networks. Proceedings 27th International Workshop on Combinatorial Algorithms (IWOC16), *Lecture Notes in Computer Science*, n. 9843, pp. 109-121, Springer, 2016.
- M. D'Emidio, D. Frigioni, A. Navarra. Characterizing the Computational Power of Anonymous Mobile Robots. Proceedings 36th IEEE International Conference on Distributed Computing Systems (ICDCS 2016), pp. 293-302, IEEE, 2016.
- A. D'Andrea, M. D'Emidio, D. Frigioni, S. Leucci, G. Proietti. Path Fault Tolerant Approximate Shortest Path Trees. In Proceedings of ~~22nd International Colloquium on Structural Information and Communication Complexity (SIROCCO 2015)~~, *Lecture Notes in Computer Science*, n. 9439, pp. 24-38, Springer, 2015.
- A. Cionini, G.D'Angelo, M.D'Emidio, D.Frigioni, K.Giannakopoulou, A.Paraskevopoulos, C. Zaroliagis. Engineering Graph-Based Models for Dynamic Timetable Information Systems. *Proc. 14th ATMOS Workshop (ATMOS14). Open Access Series in Informatics*, vol.42, pp. 46-62, 2014.
- M. D'Emidio, D. Frigioni. Engineering Shortest-Path Algorithms for Dynamic Networks. *Proceedings 15th Italian Conf. on Theoretical Computer Science (ICTCS14). CEUR Workshop Proceedings*, vol. 1231, pp. 265-269, 2014.
- A. D'Andrea, M. D'Emidio, D. Frigioni, S. Leucci, G. Proietti. Experimental Evaluation of Dynamic Shortest Path Tree Algorithms on Homogeneous Batches. *Proc. 13th International Symposium on Experimental Algorithmics (SEA2014). Lecture Notes in Computer Science*, n. 8504, pp. 283-294, Springer, 2014.
- A. D'Andrea, M. D'Emidio, D. Frigioni, S. Leucci, G. Proietti. Dynamically maintaining shortest path trees under batches of updates. Proceedings 20th Int. Colloquium on Structural Information and Communication Complexity (SIROCCO2013). *Lecture Notes in Computer Science*, n. 8179, pp. 286-297, Springer, 2013.
- M. D'Emidio, D. Frigioni, A. Navarra. Exploring and making safe dangerous networks using mobile entities. *Proc. 12th International Conference on Ad Hoc Networks and Wireless (ADHOC-NOW13). Lecture Notes in Computer Science* n. 7960, pp. 136-147, Springer 2013.
- G. D'Angelo, M. D'Emidio, D. Frigioni, D. Romano. Enhancing the computation of distributed shortest paths on real dynamic networks. *Proc. 1st Mediterranean Conference on Algorithms (MedAlg2012). Lecture Notes in Computer Science*, n. 7659, pp. 148-158, Springer 2012.
- G. D'Angelo, M. D'Emidio, D. Frigioni, D. Romano. Efficient algorithms for distributed shortest paths on power-law networks. *In 13th Italian Conference on Theoretical Computer Science (ICTCS2012)*, 2012.
- G. D'Angelo, M. D'Emidio, D. Frigioni, V. Maurizio. Engineering a new loop-free shortest paths routing algorithm. *Proc. 11th Int. Symposium on Experimental Algorithmics (SEA2012). Lecture Notes in Computer Science*, n. 7276, pp. 123-134, Springer 2012.
- G. D'Angelo, M. D'Emidio, D. Frigioni, C. Vitale. Fully dynamic maintenance of arc flags in road networks. *Proc. 11th Int. Symposium on Experimental Algorithmics (SEA2012). Lecture Notes in Computer Science*, n. 7276, pp. 135-147, Springer 2012.
- M. D'Emidio, G. D'Angelo, D. Frigioni, V. Maurizio. A speed-up technique for distributed shortest

- paths computation. Proceedings 11th Int. Conf. on Computational Science and its Applications (ICCSA2011). Lecture Notes in Computer Science, n. 6783, pp. 578-593, Springer-Verlag 2011.
- G. D'Angelo, D. Frigioni, C. Vitale. Dynamic Arc Flags in Road Networks. Proceedings 10th International Symposium on Experimental Algorithms (SEA2011). Lecture Notes in Computer Science , n. 6630, pp. 88-99, Springer-Verlag 2011.
  - G. D'Angelo, D. Frigioni, V. Maurizio. An experimental study of distributed algorithms for shortest paths on real networks. Proceedings 12th Italian Conference on Theoretical Computer Science (ICTCS2010), 2010.
  - S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, V. Maurizio. A new Fully Dynamic Algorithm for Distributed Shortest Paths and its Experimental Evaluation. Proceedings 9th International Symposium on Experimental Algorithms (SEA2010). Lecture Notes in Computer Science n. 6049, pp. 59-70, Springer 2010.
  - P. Di Marco, T. Di Mascio, D. Frigioni, M. Gastaldi. Evaluating the Effectiveness and the Efficiency of a Vector Image Search Tool. Proceedings 13th International Conference on Human-Computer Interaction (HCI09). Lecture Notes in Computer Science n.5618, pp. 259-268, Springer 2009.
  - S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Navarra. Delay Management Problem: Complexity Results and Robust Algorithms. Proceedings 2nd Int. Conference on Combinatorial Optimization and Applications (COCOA08). Lecture Notes in Computer Science n. 5165, pp. 458-468, Springer 2008.
  - F. Cucchiella, M. Gastaldi, D. Frigioni. Tariff Regulation of the Integrated Water Service: an Italian case. Proc. 2nd International Conference on Environmental Economics and Investment Assessment (EEIA08), pp. 21-30, WIT Press, 2008.
  - G. Miscione, G. Antonini, D. Frigioni. A mixed nodal-mesh formulation of the PEEC method based on efficient graph algorithms. Proceedings IEEE International Symposium on Electromagnetic Compatibility (EMC08), pp 1-6, IEEE Press 2008.
  - F. Bruera, S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni. Maintenance of Multi-level Overlay Graphs for Timetable Queries. Proceedings of the 7th Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems (ATMOS07), pp. 226-242, IBFI Schloss Dagstuhl, 2007.
  - S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni, A. Navarra. Robust Algorithms and Price of Robustness in Shunting Problems. Proceedings of the 7th Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems (ATMOS07), pp. 175-190, IBFI Schloss Dagstuhl, 2007.
  - T. Di Mascio, D. Frigioni, L. Tarantino. Evaluation of VISTO: a new Vector Image Search Tool. Proc. of the Human Computer Interaction International 2007 (HCI2007). Lecture Notes in Computer Science, vol. 4552, pp. 836-845, Springer 2007.
  - T. Di Mascio, D. Frigioni, L. Tarantino. Evaluation of a CBIR System for Vector Images. Proceedings of the Computer Human Interaction (CHIItaly07), June 28-30, 2007, Padova (Italy).
  - F. Bruera, S. Cicerone, G. D'Angelo, G. Di Stefano, D. Frigioni. On the Dynamization of Shortest Path Overlay Graphs. First annual Workshop on Robust Planning and Rescheduling in Raylways April 18-19, 2007, Utrecht, The Netherlands.
  - G. D'Angelo, S. Cicerone, G. Di Stefano, D. Frigioni. Partially Dynamic Concurrent Update of Distributed Shortest Paths. Proceedings IEEE International Conference on Computing: Theory and

Applications (ICCTA07), pp. 32-38, IEEE Press.

- T. Di Mascio, D. Frigioni, L. Tarantino. A visual environment for tuning a content-based vector image retrieval engine. Proceedings of the Human Computer Interaction International (HCII2005). Lawrence-Erlbaum Associates, 2005.
- T. Di Mascio, M. Francesconi, D. Frigioni, L. Tarantino. Tuning a CBIR system for vector images: the interface support. Proceedings of the ACM int. working conf. on Advanced Visual Interfaces (AVI2004), pp. 425-428. ACM Press, 2004.
- D. Frigioni, L. Tarantino. A Zooming Model for Geographic Maps. Proc. Workshop on Spatial Data and Geographic Information Systems (SpaDaGIS03), March 10, 2003, Milano, Italia.
- D. Frigioni, L. Tarantino. Interactive Poster: A Zooming Model for Geographic Maps. Proc. of the IEEE Symposium on Information Visualization (InfoVis02), pp. 16-17. IEEE Press, 2002.
- G. Ausiello, P. G. Franciosa, D. Frigioni. Directed Hypergraphs: Problems, Algorithmic Results and a General Decremental Algorithm. Proceedings of the 7th Italian Conference on Theoretical Computer Science (ICTCS01). Lecture Notes in Computer Science, vol. 2202, pp. 312-328, Springer.
- S. Cicerone, G. Di Stefano, D. Frigioni, U. Nanni. A Fully Dynamic Algorithm for Distributed Shortest Paths. Proc. of the Latin American Theoretical Informatics (LATIN00). Lecture Notes in Comp. Science, vol. 1776, pp. 247-256, Springer.
- S. Cicerone, D. Frigioni, P. Di Felice. Decomposing Spatial Databases and Applications. Proceedings of the International Workshop on Advanced Spatial Data Management (ASDM00), pp. 861-868, IEEE Press.
- S. Cicerone, D. Frigioni, L. Tarantino. Supporting a Focus+Context Interaction Style for Spatial Databases. Proceedings of the International Conference on Web Information Systems Engineering (WISE2000), pp. 317-324, IEEE Press, 2000.
- S. Cicerone, D. Frigioni, L. Tarantino. Interacting with Geographic Databases: a Focus+Context Approach. Proceedings of the Int. Workshop on Advanced Spatial Data Management (ASDM2000), pp. 869-875, IEEE Press, 2000.
- S. Cicerone, D. Frigioni, L. Tarantino. On the Formalization of Zoom-based Interaction with Geographic Databases. Atti del convegno annuale su Sistemi Evoluti per Basi di Dati (SEBD2000), L'Aquila 26-28 Giugno 2000, pp. 401-414.
- C. Demetrescu, D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Maintaining Shortest Paths in Digraphs with Arbitrary Arc Weights: An Experimental Study. Proceedings 3rd Workshop on Algorithm Engineering (WAE2000). Lecture Notes in Computer Science, vol. 1982, pp. 218-229, Springer.
- S. Cicerone, D. Frigioni, L. Tarantino, P. Di Felice. Interacting with Topological Invariants of Spatial Databases. Proc. of the IEEE Int. Symp. on Database Applications in Non-Traditional Environments (DANTE99), pp. 114-119, IEEE Press, 1999.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Fully Dynamic Shortest Paths and Negative Cycle Detection in Digraphs with Arbitrary Arc Weights. Proceedings of the 6th European Symposium on Algorithms (ESA98). Lecture Notes in Computer Science, vol. 1461, pp. 320-331, Springer.
- D. Frigioni, T. Miller, U. Nanni, G. Pasqualone, G. Shaefer, C. Zaroliagis. An Experimental Study of Dynamic Algorithms for Directed Graph. Proceedings of the 6th European Symposium on Algorithms (ESA98). Lecture Notes in Computer Science, vol. 1461, pp. 368-380, Springer.
- G. Ausiello, P. G. Franciosa, D. Frigioni, R. Giaccio. Decremental Maintenance of Reachability in



Hypergraphs and Minimum Models of Horn Formulae. Proceedings 8th International Symposium on Algorithms and Computation (ISAAC97). Lecture Notes in Computer Science, vol. 1350, pp. 122-131, Springer.

- P. G. Franciosa, D. Frigioni, R. Giaccio. Semi-Dynamic Shortest Paths and Breadth First Search in Digraphs. Proceedings of the 14th International Symposium on Theoretical Aspects of Computer Science (STACS97). Lecture Notes in Computer Science, vol. 1200, pp. 33-46, Springer.
- D. Frigioni, M. Ioffreda, U. Nanni, G. Pasqualone. Experimental Analysis of Dynamic Algorithms for the Single Source Shortest Path Problem. Proceedings of the 1st Workshop on Algorithmic Engineering (WAE97), Venezia, Italy, September 11-13 1997, pp.54-63.
- D. Frigioni, G. F. Italiano. Dynamically Switching Vertices in Planar Graphs. Proceedings of the 5th European Symposium on Algorithms (ESA97). Lecture Notes in Computer Science, vol. 1284, pp. 186-199, Springer.
- S. Cicerone, D. Frigioni, U. Nanni, F. Pugliese. Counting Edges in a Dag. Proceedings of the 22nd Int. Workshop on GraphTheoretic Concepts in Computer Science (WG96). Lecture Notes in Computer Science, vol. 1197, pp. 85-100, Springer.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Fully Dynamic Output Bounded Single Source Shortest Paths Problem. Proceedings of the 7th Symposium on Discrete Algorithms (SODA96), pp. 212-221. ACM-SIAM, 1996.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Dynamization of the Backtrack-free Search for the Constraint Satisfaction Problem. Proceedings of the 2nd Conference on Algorithms and Complexity (CIAC94). Lecture Notes in Computer Science, vol. 778, pp. 136-151, Springer.
- D. Frigioni, A. Marchetti-Spaccamela, U. Nanni. Incremental Algorithms for the Single Source Shortest Path Problem. Proceedings 14th Int. Conference on Foundation of Software Technology and Theoretical Computer Science (FST&TCS94). Lecture Notes in Computer Science, vol. 880, pp. 113-124, Springer.