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SHORT SUMMARY OF QUALIFICATIONS

SCIENTIFIC PROFILE

After getting a Ph.D. in Computer Science at Columbia University, I worked as a Research Staff Member at the IBM T.J. Watson Research Center in Yorktown Heights (New York). When I was 33 years old, I won a National competition for Full Professor and went back to Italy. I have worked on a wide variety of problems, producing highly-cited results on a number of different areas. Most of my research is centered around the design, analysis and engineering of algorithms for big data sets, with applications to several areas, including graph theory, social network analysis, computer and network security, and computational biology. My background, which includes also an experience in industrial research, puts me in a unique position to carry out work that combines basic research with a strong focus on applications.

I published more than 260 papers, most of which in top journals and conferences in theoretical computer science / algorithms, such as *J. ACM, SIAM J. Comp., J. Comput. Syst. Sci., ACM Trans. on Alg., Theor. Comp. Sci.*, and *ACM STOC, IEEE FOCS, ACM-SIAM SODA, ICALP* (in computer science, many top tier conferences are highly respected publication venues, arguably with journal-equivalent rankings). As of October 2017, I have a total of 6,317 citations and h-index 39, calculated with Google Scholar, and 2,464 citations and h-index 25, calculated with Scopus.

In 2016 I was nominated *EATCS Fellow* for "*fundamental contributions to the design and analysis of algorithms for solving theoretical and applied problems in graphs and massive data sets, and for his role in establishing the field of algorithm engineering*". The *European Association for Theoretical Computer Science* (EATCS) is an international organization founded in 1972, and EATCS Fellows are recognized for their outstanding scientific achievements in theoretical computer science (currently there are only about 20 EATCS Fellows). As a further indication of my scientific visibility within the international community, in 2011 I have been appointed to the Gödel Prize Committee; the Gödel Prize is the award given to outstanding papers in theoretical computer science, awarded annually since 1993 by the Association for Computing Machinery (ACM) and the European Association for Theoretical Computer Science (EATCS).

I enjoy collaborating with junior researchers and PhD students, and I am committed to fostering excellence in graduate education. In the last 20 years I supervised a total of 19 PhD students (14 graduated, 5 on-going). One of my former PhD students, Fabrizio Grandoni, was awarded one of the prestigious ERC Starting Grants after his Ph.D.

TEACHING

I enjoy teaching and I have an extensive teaching experience. In the last 20 years I have been always teaching at least 2-3 courses per year, both at the undergraduate (bachelor) and graduate (master) level. Most of the courses were in the area of algorithms and data structures but I also taught courses on several other topics, including introduction to computer programming, computer architecture, database systems and computer and network security. Currently, I am teaching the following courses (if not specified, the courses are at the University of Rome Tor Vergata): Algorithm Engineering (Ingegneria degli algoritmi); Web Algorithmics (Algoritmi per il Web); Algorithms, Data and Security; Introduction to Computer Science (Informatica) at LUISS University; Customer Intelligence and Big Data (Customer Intelligence e Logiche di Analisi dei Big Data) at LUISS University. I have been teaching also courses both at the undergraduate and graduate level for several universities worldwide (e.g., Aarhus University, Columbia University, University of Copenhagen,

Hong Kong University of Science & Technology, Warsaw University) and I have been invited to lecture in several international Summer Schools.

PROFESSIONAL EXPERIENCE

I have been Editor-in-Chief and Associate Editor of 7 international journals, and I have been member / chair of more than 80 Program Committees (PC) of international conferences, including the most prestigious in theoretical computer science / algorithms (e.g., STOC, FOCS, SODA, ICALP). Those prestigious conferences have small PCs (around 20 members) compared to the number of submissions (typically several hundred papers), and so being in the PC of those conferences is highly selective. On another note, I strive to pursue research questions that are not only academically challenging, but also relate to important practical problems, and thus I have been actively working on the technology transfer of my research results: I co-founded two successful startups, TrustMyPhone (`http://trustmyphone.com`, recently sold to an Italian company) and Wireless Lab (`http://www.w-lab.it`, recently sold to a French company), and I am a member of the Advisory Board of RoboAdvisorCoin (`http://roboadvisorcoin.com`), a Robo-Advisor dedicated to cryptocurrencies, which was among the first to launch an ICO (Initial Coin Offering) in the EU zone. I have been Member of the Board of Directors of another startup (`http://www.innovazioniperlaterra.org/`) and of Consorzio Roma Ricerche, a consortium that supports and promotes technology transfer from research to industry. This is reflected also in my research funding, which comes not only from highly competitive grants from the European Union and the Italian Ministry of Education, University and Research (MIUR), but also from several industrial research contracts with large companies (e.g., Leonardo Finmeccanica SpA, Microsoft, Elettronica SpA) and SMEs (e.g., BioFly, Land, Mashfrog, Spike Reply).

SENIOR MANAGEMENT

Throughout the years I held several positions of high responsibility in the university. I have been Chair of the Evaluation Committee (Presidente del nucleo di valutazione) at University of Rome Tor Vergata for 6 years, where I was responsible for evaluation (quality and effectiveness of courses offered and of the research activities carried out) and for strategic planning and control of the University. I have been Department Chair for 8 years: my Department had about 40 professors and researchers, 50 Ph.D. students and postdocs, and 5 administrative / tech staff, with an yearly budget (salary excluded) of the order of million euros. My responsibilities as Department Chair included providing leadership toward the achievement of excellence in teaching, research and service activities of the department, working with other Chairs and Deans to coordinate resource allocations and faculty hires, preparing and proposing budget requests, attracting research grants at the department level, administering the department budget and supervising the work of tech / administrative staff within the department. At University of Rome Tor Vergata I was the Rector's Delegate for Quality, Evaluation and Performance (Delegato del Rettore per la Qualità, Autovalutazione e Performance), and I was in charge of the evaluation, quality control and the strategic and performance planning of the University. I am also the Coordinator of the PhD Program in Computer Science, Control and Geoinformation at University of Rome Tor Vergata. In all those positions, I have been managing and leading large teams of professors, researchers and staff.

PERSONAL INFORMATION

Born in 1961. Italian Citizen. Married plus four. Enjoy running.

EDUCATION

1988 - 91	Ph.D. in Computer Science. Columbia University, New York, NY. PhD Advisor: Prof. Zvi Galil. Thesis Title: "Dynamic data structures for graphs".
1990	M.Phil. Columbia University, New York, NY.
1987 - 88	M.Sc. in Computer Science. Columbia University, New York, NY.
1979 - 85	*Laurea summa cum laude* in Electronics Engineering. University of Rome "La Sapienza", Roma, Italy. Thesis Advisor: Prof. Giorgio Ausiello.

PRESENT POSITION

1998 -	*Professor of Computer Science.* University of Rome Tor Vergata, Italy.

PREVIOUS POSITIONS

2004 - 12	*Chair of the Department of Computer Science, Systems and Production.* University of Rome Tor Vergata.
1995 - 98	*Professor of Computer Science.* University of Venice "Ca' Foscari", Italy.
1994 - 95	*Professor of Computer Science.* University of Salerno, Italy.
1991 - 95	*Research Staff Member.* IBM Research Division, T.J. Watson Research Center, *Communication Systems Department.*
1989 - 94	*Assistant Professor.* University of Rome "La Sapienza", Italy.

OTHER APPOINTMENTS

2017 -	*Panel Member for Mathematics, Statistics and Computer Science.* Danish Council for Independent Research (DFF).
2017 -	*Coordinator* of the PhD Program in Computer Science, Control and Geoinformation. University of Rome Tor Vergata.
2017 -	*Member of the Advisory Board* of RoboAdvisorCoin (`https://roboadvisorcoin.com`), a Robo-Advisor dedicated to cryptocurrencies.
2017 -	*Member of the Council*, European Association for Theoretical Computer Science.
2017 -	*Member of the ESA Test of Time Award Committee.*
2017 -	*Member* of the ERABLE team (European Research team in Algorithms and Biology, formaL and Experimental), Laboratoire de Biométrie et Biologie Évolutive (LBBE), UMR 5558, CNRS / University Claude Bernard (Lyon 1), Lyon, France.
2017	*Visiting Professor.* Laboratoire de Recherche en Informatique (LRI), Université Paris-Sud, France.
2013 -	*Rector's Delegate for Quality, Evaluation and Performance.* University of Rome Tor Vergata.
2012 -	*Adjunct Professor*, LUISS University, Rome.
2012 -	*Member of the Board of Directors.* In-Time (`http://www.innovazioniperlaterra.org/`). Start-up focusing on information technologies for the environment.
2012 - 15	*Member of the Scientific Committee*, CeRSI, Research Center in Information Systems, LUISS University, Rome.
2011 - 14	*Member of the Gödel Award Committee*, **Chair** in 2014.

2009–	*Member of the Advisory Board.* MADALGO - Center for MAssive Data ALGOrithmics, Aarhus, Denmark.
2009 - 17	*Co-founder*, TrustMyPhone (`http://trustmyphone.com`). Start-up focusing on security for mobile devices.
2006 - 13	*Member of the Council.* European Association for Theoretical Computer Science.
2002 - 08	*Chair of the Evaluation Committee.* University of Rome Tor Vergata.
2002 - 08	*Member of the Council.* European Association for Theoretical Computer Science, Italian Chapter.
2002 - 16	*Co-founder*, Wireless Lab (`http://www.w-lab.it`). Start up focusing on wireless technologies and on pervasive and mobile computing.
2001 - 07	*Member of the Board of Directors.* Roma Ricerche Consortium.
2001 - 04	*Coordinator* for the *Campus One* infrastructural grant at University of Rome Tor Vergata. Total funding was approximately ITL 3.5 billions.
2000	*Visiting Professor.* Department of Computer Science, Columbia University.
2000	*Member of the EATCS Doctoral Dissertation Thesis Award Committee*, EATCS Italian Chapter
1998	*Visiting Professor.* Department of Computer Science, The Hong Kong University of Science & Technology.

PRIZES AND AWARDS

2016	*EATCS Fellow* for "*fundamental contributions to the design and analysis of algorithms for solving theoretical and applied problems in graphs and massive data sets, and for his role in establishing the field of algorithm engineering*".
2011	Best Paper Award at the *8th Symposium on String Processing and Information Retrieval* (SPIRE 2011).
1997	*Distinguished Visiting Professor.* Max–Planck–Institut für Informatik, Saarbrücken, Germany.
1988 - 91	IBM Graduate Fellowship.
1986 - 87	Italian National Research Council Fellowship.

COMPETITIVE RESEARCH FUNDING

2015-17	Leonardo Finmeccanica S.p.A., Grant on "Tools and Techniques for the Analysis of Criminal Networks" (Principal Investigator).
2015	Elettronica S.p.A., Grant on "Automatic Coverage Planning" (Principal Investigator).
2014-16	Italian Ministry of Education, University and Research, PRIN 2012 Project AMANDA: Algorithmics for MAssive and Networked DAta (Principal Co-Investigator).
2013-14	Mashfrog S.p.A., Grant on "Wine Web 2.0: Innovative algorithms for mobile transactions" (Principal Investigator).
2012-13	TrustMyPhone S.r.l., Grant on "My Mobile Enterprise (MYME)" (Principal Investigator).
2012-13	FILAS S.p.A., Grant on "Mobile solutions for e-Health (HE.Mob.TV)" (Principal Investigator).
2011	Elettronica S.p.A., Grant on "Cyber Threats" (Principal Investigator).
2011	Elettronica S.p.A., Grant on "OODA Loops" (Principal Investigator).
2011	Elettronica S.p.A., Grant on "HLA Federated Simulator for Network Centric Scenarios" (Principal Investigator).

2011	Land S.r.l., Grant on "High Capacity Color 2D Barcodes" (Principal Investigator).
2010-12	European Union, Grant on Secure Imprint GeNerated for papEr Documents (SIGNED), Project No. 262448, FP7-SME-2010-1 (Principal Co-Investigator).
2010-12	Italian Ministry of Education, University and Research, PRIN 2008 Project AlgoDEEP: Algorithmic Challenges for Data-intensive Processing on Emerging Computing Platforms (Principal Co-Investigator).
2010-11	Biofly S.r.l., Grant on Virtual Black Box (Principal Investigator).
2010	Elettronica S.p.A., Grant on Simulators for Mobile Ad Hoc Networks (Principal Investigator).
2008-11	European Union, Network of Excellence EuroNF: Network of Excellence on Anticipating the Network of the Future - From Theory to Design.
2008-09	Elettronica S.p.A., Grant on Benchmarking for Single Board Computers (Principal Investigator).
2008-09	Biofly S.r.l., Grant on Security for Adhoc Networks (Principal Investigator).
2008	Zeta Reticuli S.r.l., Grant on Mobile Security (Principal Investigator).
2007-08	Spike Replay S.r.l., Grant on Digital Signatures for SMS on smart phones (Principal Investigator).
2007-08	Telefono Azzurro Onlus, Grant on Web Security (Principal Investigator).
2007-09	Italian Ministry of Education, University and Research, PRIN 2006 Project MAIN-STREAM: Algorithms for Massive Information Structures and Data Streams (Principal Co-Investigator).
2006-08	European Union, Network of Excellence EuroFGI: Design and Engineering the Future Generation Internet - Towards convergent multi-service networks.
2005-06	FILAS S.p.A., Finanziaria Laziale di Sviluppo, Project WEPSS: Web Platform for Secure Sharing of Data and Applications (Principal Investigator).
2004-06	Italian Ministry of Education, University and Research, PRIN 2004 Project ALGO-NEXT: Algorithms for Next Generation Internet and Web (Principal Co-Investigator).
2004	Land S.r.l.: Grant on "Security issues for paper documents" (Principal Investigator).
2003-06	European Union, Network of Excellence EuroNGI: Design and Engineering the Next Generation Internet.
2002-04	Italian Ministry of Education, University and Research, PRIN 2002 Project on Algorithms for Internet and Web (Principal Co-Investigator).
2001-02	CNR, Italian National Research Council, Contract n. 01.00690.CT26 (Principal Investigator).
2001-02	Special Research Grant from University of Rome Tor Vergata on Algorithmic software for timetabling (Principal Co-Investigator).
2001-02	ENEA, Italian Agency for New Technologies, Energy and Environment, Grant on "Design and Simulation of Innovative Transportation Systems" (Principal Investigator).
2000-01	CNR, Italian National Research Council, Contract n. 00.00346.CT26 (Principal Investigator).
2000-01	CNR, Italian National Research Council, Contract n. 99.00602.CT12 (Principal Investigator).
2000-01	Italian Ministry of University and Scientific Research, PRIN 1999 Project on "Algorithms for Large Data Sets: Science and Engineering", (Principal Co-investigator).

Over the last five years (2012–2016) my average yearly grant income was EUR 333,592.40.

EDITORIAL BOARDS

Journal Editorial Boards

2007–	Associate Editor, *Algorithmica*
2002–	Associate Editor, *Theoretical Computer Science*, Track A
2008–2017	Editor-in-Chief, *ACM Journal on Experimental Algorithmics*
2008–2010	Associate Editor, *Journal of Discrete Algorithms*
1999–2008	Editor-in-Chief, *Journal of Discrete Algorithms*
1999–2008	Associate Editor, *ACM Journal on Experimental Algorithmics*
1995–2007	Associate Editor, *Journal of Complexity*
1997–2003	Associate Editor, *Discrete Mathematics and Theoretical Computer Science*
1995–2003	Associate Editor, *Journal of Computing and Information*

Journal Guest Editor

1. *Theoretical Computer Science*, vol. 658 (263), 2017. Special issue on 'Horn Formulas, Directed Hypergraphs, Lattices and Closure Systems: related formalisms and applications".
2. *Algorithmica*, vol. 73(4), 2015. Special issue on the 21st European Symposium on Algorithms.
3. *Journal of Discrete Algorithms*, vol. 7(3), 2009. Special issue on the 6th Int. Conf. on Algorithms and Complexity.
4. *Theoretical Computer Science*, vol. 380 (1–2), 2007. Special issue on the 32nd Int. Coll. on Automata, Languages and Programming.
5. *ACM Journal on Experimental Algorithmics*. Special issue on the 6th Workshop on Algorithm Engineering and Experimentation.
6. *Journal of Discrete Algorithms*, Special Issue, vol. 4 (3), September 2006.
7. *Journal of Algorithms*, 49, 1 (2003). Special Issue on the European Symposium on Algorithms 98.
8. *Algorithmica* vol. 30 (4), 2001, Special issue on Algorithm Engineering.
9. *Journal on Complexity* 15 (1), 1999. Festschrift for Zvi Galil.
10. *ACM Journal on Experimental Algorithmics* 3 (1998). Special Issue on the Workshop on Algorithm Engineering 1997.
11. *Theoretical Computer Science* 130 (1), 1994. Special Issue on Dynamic and On-line Algorithms.

KEYNOTE LECTURES

Invited Lectures at International Schools

1. *4th School on Graph Theory, Algorithms and Applications*, Erice, Italy, 5–13 May, 2017.
2. *Summer school ADDICTION: ADdressing DIfficult problems in a Computationally Tractable fashION*, in Lisbon, Portugal, 16–21 November 2014.
3. *3rd School on Graph Theory, Algorithms and Applications*, Erice, Italy, 8–16 September, 2014.
4. *Microsoft School on Algorithms and Systems for Large Datasets*, Moscow, Russia, July 31 – August 7, 2013.
5. *17th Estonian Winter School in Computer Science* (EWSCS), Palmse, Estonia, February 26 -March 2, 2012 .
6. *Microsoft Data Structures and Algorithms School* (MIDAS), St. Petersburg, Russia, August 8-14, 2010.
7. *School on Graph Theory, Algorithms and Applications*, Erice, Italy, 8–16 September, 2008.
8. *20th International School on Algorithms: Science and Engineering*, Lipari, Italy, July 13 – July 26, 2008.

9. *Summer School on Shortest Paths - Between Algorithms and Optimization* (PATH05), July 4-8, 2005, Copenhagen, Denmark.

Invited Lectures at Conferences

1. *17th International Symposium on Experimental Algorithms* (SEA 2018), L'Aquila, Italy, June 27–29 2018.
2. *10th International Conference on Algorithms and Complexity* (CIAC 2017), Athens, Greece, May 24–26, 2017.
3. *24th Annual European Symposium on Algorithms* (ESA 2016), Aarhus, Denmark August 22–24, 2016.
4. *27th International Workshop on Combinatorial Algorithms* (IWOCA 2016), Helsinki, Finland, August 17–19, 2016.
5. *10th International Workshop on Algorithms and Computation* (WALCOM 2016), March 29-31, 2016 Kathmandu, Nepal.
6. *25th International Symposium on Algorithms and Computation* (ISAAC 2014), December 15–17, 2014 Jeonju, Korea.
7. *Theoretical Computer Science* (TCS 2014), September 1–3, 2014, Rome, Italy.
8. NATO *Technology for Information, Decision and Execution Superiority* (TIDE) Sprint, 16-20 April 2012. Utrecht, The Netherlands.
9. *38th International Conference on Current Trends in Theory and Practice of Computer Science* (SOFSEM 2012), January 21-27, 2012, Špindlerův Mlýn, Czech Republic.
10. *7th International Conference on Algorithms and Complexity* (CIAC 2010), May 26-28, 2010 Rome, Italy.
11. *4th International Symposium on Experimental Algorithms* (SEA 2010), Ischia, Italy, May 20-22 2010.
12. *12th International Conference on Principles and Practice of Constraint Programming* (CP 2006), September 25-29, 2006, Nantes, France.
13. *ALGO 2005* (Joint Symposium and Workshops: ESA 2005, WABI 2005, WAOA 2005, ATMOS 2005), 3-7 October 2005, Palma de Mallorca, Spain.
14. *3rd Workshop on Experimental Algorithms* (WEA 04), May 25–28 2004, Angra dos Reis, Brazil.
15. *11th International Symposium on Graph Drawing* (GD 2003), September 21–24 2003, Perugia, Italy.
16. *14th Australasian Workshop on Combinatorial Algorithms* (AWOCA 2003), July 13–16 2003, Seoul, Korea.
17. "Silver Jubilee", *25th International Symposium on Mathematical Foundations of Computer Science* (MFCS 2000), August 28 – September 1, 2000, Bratislava, Slovakia.
18. *Workshop on Advances in Data Structures*, December 11–12 1999, Chennai, India.
19. Workshop on Dynamic Graph Problems, *Thematic Programme on Graph Theory and Combinatorial Optimization*, June 5–9, 2000, Victoria, Canada.
20. "Fundamentals" Track (Foundations of Computer Science), *15th IFIP World Computer Congress* (IFIP 98), August 31 – September 4, 1998, Vienna (Austria), 1998.
21. *1st South American Workshop on String Processing* (WSP 93), 13-15 September 1993, Belo Horizonte, Brazil, 1993.
22. *20th Theory Day* at Columbia University, New York, U.S.A., 1992.

STEERING COMMITTEES

2017–	Steering Committee Member of the *Workshop on Algorithm Engineering and Experimentation* (ALENEX).
2012–2015	Steering Committee Member of the *European Symposium on Algorithms* (ESA), **Chair** from 2013.

2012–2014	Member of the NATO RTO Task Group "Trusted Information Sharing for Partnerships" (IST-114).
2010–	Steering Committee Member of the *International Conference on Algorithms and Complexity* (CIAC).
2007–2010	Steering Committee Member of the *European Symposium on Algorithms* (ESA).
2005–	Steering Committee Member of the *Workshop/Symposium on Experimental Algorithms* (WEA / SEA).
2004–2007	Steering Committee Member of the *Workshop on Algorithm Engineering and Experimentation* (ALENEX).
1997–2000	Steering Committee Member of the *Workshop on Algorithm Engineering* (WAE).
1997–2000	Steering Committee Member of the *European Symposium on Algorithms* (ESA).

PROGRAM COMMITTEES

Program Committee Member / Chair

1. *50th Annual ACM Symposium on the Theory of Computing* (STOC 2018), Los Angeles, CA, USA, June 25-29, 2018.
2. *45th International Colloquium on Automata, Languages, and Programming* (ICALP 2018) Prague, Czech Republic, July 9-13, 2018.
3. *12th International Conference and Workshop on Algorithms and Computation* (WALCOM 2018), Dhaka, Bangladesh, March 3-5, 2018.
4. *24th Annual Symposium on String Processing and Information Retrieval* (SPIRE 2017), Palermo, Italy, September 26–28, 2017.
5. *11th International Frontiers of Algorithmics Workshop* (FAW 2017), Chengdu, Sichuan, China, June 23–25, 2017.
6. *34th International Symposium on Theoretical Aspects of Computer Science* (STACS 2017), Hannover, Germany, March 8–11, 2017.
7. *27th International Symposium on Algorithms and Computation* (ISAAC 2016), Sydney, Australia, Dec 12–14, 2016.
8. *24th Annual European Symposium on Algorithms* (ESA 2016), Aarhus, Denmark August 22–24, 2016.
9. *27th Annual Symposium on Combinatorial Pattern Matching* (CPM 2016), Tel Aviv, Israel, June 27–29, 2016
10. *4th International Symposium on Combinatorial Optimization* (ISCO 2016), Vietri sul Mare, Italy, May 16-18, 2016.
11. *12th Latin American Theoretical Informatics Symposium* (LATIN 2016), Ensenada, Mexico, April 11-15, 2016.
12. *27th ACM-SIAM Symposium on Discrete Algorithms* (SODA 2016), Arlington, Virginia, USA, January 10-12, 2016.
13. **Program Committee Co-Chair**, *15th Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems* (ATMOS 2015), Patras, Greece, 17 September 2015.
14. *7th Workshop on Massive Data Algorithmics* (MASSIVE 2015), Patras, Greece, 17 September 2015.
15. **Program Committee Co-Chair**, *40th International Symposium on Mathematical Foundations of Computer Science* (MFCS 2015) Milan, Italy, August 24–28, 2015.
16. **Program Committee General Chair**, *41st International Conference on Current Trends in Theory and Practice of Computer Science*, (SOFSEM 2015), January 2015.
17. *41st International Colloquium on Automata, Languages, and Programming* (ICALP 14), Track A, Copenhagen, Denmark, July, 2014.

18. **Program Chair**, *21st Annual European Symposium on Algorithms*, (ESA 2013) Track B, Sophia Antipolis, France, 2–6 September, 2013.

19. **Global Chair**, *19th International European Conference on Parallel and Distributed Computing* (Euro-Par 2013), Topic 12 "Theory and Algorithms for Parallel Computation", Aachen, Germany, August 26–30, 2013.

20. **Executive Committee Member**, *45th ACM Symposium on Theory of Computing* (STOC 2013), Palo Alto, CA, June, 1-4, 2013

21. **Program Chair**, *39th International Conference on Current Trends in Theory and Practice of Computer Science*, (SOFSEM 2013), Track "Foundations of Computer Science", January 26–31, 2013.

22. *1st Mediterranean Conference on Algorithms* (MEDALG 2012), Ein-Gedi, Israel, December 3–5, 2012.

23. *International Workshop on Data Analytics and Mining in the Cloud*, Taipei, Taiwan, December 3–6, 2012.

24. *43rd Annual Conference of the Italian Operational Research Society* (AIRO 2012), Vietri sul Mare, September 4-7 2012.

25. *37th International Symposium on Mathematical Foundations of Computer Science* (MFCS 2012) Bratislava, Slovakia, August 27–31, 2012.

26. *8th Conf. on Next Generation Internet Networks* (NGI 2012), Blekinge Institute of Technology, Karlskrona, Sweden, June 25–27, 2012.

27. *13th Scandinavian Symposium and Workshops on Algorithm Theory* (SWAT 2012), Helsinki, Finland, 4–6 July 2012.

28. *9th International Conference on Integration of Artificial Intelligence and Operations Research Techniques in Constraint Programming* (CPAIOR 2012), Nantes, France, May 28 – June 1, 2012.

29. *12th Algorithms and Data Structure Symposium* (WADS 2011), Brooklyn, NY, USA, August 15–17, 2011.

30. *4th International Conference on Contemporary Computing* (IC3 2011), Noida, Uttar Pradesh, India, August 8–11, 2011.

31. *7th Conf. on Next Generation Internet Networks* (NGI 2011), Kaiserslautern, Germany, 27–29 June 2011.

32. *21st International Symposium of Algorithms and Computation* (ISAAC 2010), Jeju island, Korea, December 15–17, 2010.

33. *37th International Colloquium on Automata, Languages, and Programming* (ICALP 10), Track A, Bordeaux, France, 5–12 July, 2010.

34. *36th International Workshop on Graph Theoretic Concepts in Computer Science* (WG 10), Zaros, Crete, Greece, June 28–30, 2010.

35. *6th Conf. on Next Generation Internet Networks* (NGI 10), Paris, France, June 2–4, 2010.

36. *12th Workshop on Algorithm Engineering and Experimentation* (ALENEX 10) Austin, Texas, January 16 2010.

37. *17th Annual European Symposium on Algorithms*, (ESA 09), Copenhagen, Denmark, 7–9 September, 2009.

38. *34st International Symposium on Mathematical Foundations of Computer Science*, (MFCS 09), Novy Smokovec, High Tatras, Slovakia, August 24–28, 2009

39. *5th IEEE Conf. on Next Generation Internet Networks* (NGI 09), Aveiro, Portugal, 22–24 June 2009.

40. *8th International Symposium on Experimental Algorithms*, (SEA 09), Dortmund, Germany, June 3-6, 2009.

41. *3rd International Workshop on Algorithms and Complexity*, (WALCOM 09), Kolkata, India, 18-20 February, 2009.

42. *35th International Conference on Current Trends in Theory and Practice of Computer Science* (SOFSEM 09), Špindlerův Mlýn, Czech Republic, January 24-30, 2009.

43. *5th IFIP International Conference on Theoretical Computer Science* (TCS 08), Track A, Milano, Italy, 8-10 September, 2008.

44. *35th International Colloquium on Automata, Languages, and Programming* (ICALP 08), Track A, Reykjavik, Iceland, 7-11 July, 2008.

45. *4th IEEE Conf. on Next Generation Internet Networks* (NGI 08), Kraków, Poland, 28–30 April 2008.

46. **Program Co-Chair**, *10th Italian Conference on Theoretical Computer Science*, (ICTCS 07), Rome, Italy, 3–6 October, 2007.

47. *32nd International Symposium on Mathematical Foundations of Computer Science* (MFCS 07), Cesky Krumlov, Czech Republic, 27–31 August, 2007.

48. *6th Workshop on Experimental Algorithms* (WEA 07), Rome, Italy, 6–9 June, 2007.

49. *3rd Int. Conference on Algorithmic Aspects in Information and Management* (AAIM'07), Portland, USA, 6–8 June, 2007.

50. *3rd IEEE Conf. on Next Generation Internet Networks – Traffic Engineering* (NGI 07), Tondheim, Norway, 23–25 May 2007.

51. **Program Chair**, *33rd International Conference on Current Trends in Theory and Practice of Computer Science*, (SOFSEM 07), Track "Foundations of Computer Science", Harrachov, Czech Republic, January 20-26, 2007.

52. *25th Int. Conference on Foundations of Software Technology and Theoretical Computer Science* (FSTTCS 06), Calcutta, India, 13–15 December 2006.

53. *2nd Int. Conference on Algorithmic Aspects in Information and Management* (AAIM'06), Hong Kong, 20–22 June 2006.

54. **Program Chair**, *6th Int. Conference on Algorithms and Complexity* (CIAC 06), Rome, Italy, 29–31 May 2006.

55. *IEEE Conf. on Next Generation Internet Networks – Traffic Engineering* (NGI 06), Valencia, Spain, April 2006.

56. **Program Chair**, *32nd International Colloquium on Automata, Languages, and Programming*, (ICALP 05), Track A, Lisbon, Portugal, 11–15 July 2005.

57. *4th Workshop on Efficient and Experimental Algorithms* (WEA 05), Santorini, Greece, May 10–13, 2005.

58. *IEEE Conf. on Next Generation Internet Networks – Traffic Engineering* (NGI 05), Rome, Italy, April 18–20, 2005.

59. *16th ACM-SIAM Symposium on Discrete Algorithms* (SODA 05), Vancouver, Canada, January 23–35, 2005.

60. *45th IEEE Symposium on Foundations of Computer Science*, (FOCS 04), Rome, Italy, 17–19 October 2004.

61. *12th European Symposium on Algorithms*, (ESA 2004), Engineering and Application Track, Bergen, Norway, September 13–18 2004.

62. *31st International Colloquium on Automata, Languages, and Programming*, (ICALP 04), Turku, Finland, July 2004.

63. **Program Co-Chair**, *6th Workshop on Algorithm Engineering and Experimentation* (ALENEX 04) New Orleans, LA, January 2004.

64. *8th Workshop on Algorithms and Data Structures* (WADS 2003), Carleton, Canada, July 30 - August 1, 2003.

65. 8th Scandinavian Workshop on Algorithm Theory (SWAT 2002), Turku, Finland, 3–5 July 2002.

66. 7th Italian Conference on Theoretical Computer Science (ICTCS 2001), Torino, Italy, 4-6 October 2001.

67. 5th International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communication (DIALM 2001), Rome Italy, 26 July 2001.

68. 28th International Colloquium on Automata, Languages, and Programming (ICALP 01), Crete, Grece, 8–12 July 2001.

69. 11th Annual International Symposium on Algorithms and Computation (ISAAC 2000), Academia Sinica, Taiwan, 18–20 December 2000.

70. 4th Italian Conference on Algorithms and Complexity (CIAC 2000), Rome, Italy, 1–2 March 2000.

71. 3rd Workshop on Algorithm Engineering (WAE 99), London, UK, 19–21 July 1999.

72. 7th European Symposium on Algorithms (ESA 99), Prague, Czech Republic, July 1999.

73. 1st Workshop on Algorithm Engineering and Experimentation (ALENEX 99) Baltimore, MD, January 15-16, 1999.

74. 6th Italian Conference on Theoretical Computer Science (ICTCS 98), Prato, Italy, 9–11 November 1998.

75. **Program Co-Chair**, *6th European Symposium on Algorithms* (ESA 98), Venice, Italy, 24–26 August 1998.

76. Electronic commerce for Small and Medium Enterprises (CABOTO 98), Venice, Italy, 26–27 February 1998.

77. 15th Symposium on Theoretical Aspects of Computer Science (STACS 98), Paris, France, 25–27 February 1998.

78. **Program Chair**, *1st Workshop on Algorithm Engineering* (WAE 97), Venice, Italy, 11–13 September 1997.

79. 5th Israeli Symposium on Theory of Computing and Systems (ISTCS 97), Ramat–Gan, Israel, 17–19 June 1997.

80. 3rd Italian Conference on Algorithms and Complexity (CIAC 97), Rome, Italy, 12–14 March 1997.

81. 3rd European Symposium on Algorithms (ESA 95), Corfu, Greece, 25-27 September 1995.

82. 4th Scandinavian Workshop on Algorithm Theory (SWAT 94), Aarhus, Denmark, 7-9 July 1994.

Organizing Committee Chair

1. *45th Annual Symposium on Foundations of Computer Science* (FOCS 2004), Rome, Italy, October 2004.

2. 6th European Symposium on Algorithms (ESA 98), Venice, Italy, 24–26 August 1998.

Other Workshops and Schools Organized

1. 8th Workshop on "Algorithm and Data Structures", June 12-16, 2017, Bertinoro, Italy. Co-organized with Andrew Goldberg, Valerie King, Robert E. Tarjan.

2. "School on Graph Theory, Algorithms and Applications", Center "Ettore Majorana" for Scientific Culture, Erice (Italy), 5–13 May 2017. Co-organized with Raffaele Cerulli, Andrew Goldberg, Robert E. Tarjan.

3. Dagstuhl Seminar on "Geometric and Graph-based Approaches to Collective Motion", Workshop, Schloß Dagstuhl, Germany, January 10-15, 2016. (Co-organized with Bettina Speckmann, Guy Theraulaz and Mark van Kreveld).

4. "School on Graph Theory, Algorithms and Applications", Center "Ettore Majorana" for Scientific Culture, Erice (Italy), 8 –16 September 2014. Co-organized with Raffaele Cerulli, Andrew Goldberg, Robert E. Tarjan.

5. "Horn formulas, directed hypergraphs, lattices and closure systems: related formalisms and applications", Workshop, Schloß Dagstuhl, Germany, May 11-16, 2014. Co-organized with Kira Adaricheva, Hans Kleine Büning, György Turan.

6. "Algorithm Engineering", Workshop, Schloß Dagstuhl, Germany, September 23–27, 2013. Co-organized with Andrew Goldberg, David S. Johnson, Dorothea Wagner.

7. 6th Workshop on "Algorithm and Data Structures", June 2-7, 2013, Bertinoro, Italy. Co-organized with Andrew Goldberg, Valerie King, Robert E. Tarjan.

8. "School on Graph Theory, Algorithms and Applications", Center "Ettore Majorana" for Scientific Culture, Erice (Italy), 25 September – 3 October, 2011. Co-organized with Raffaele Cerulli, Andrew Goldberg, Kurt Mehlhorn, Robert E. Tarjan.

9. "Algorithm Engineering", Workshop, Schloß Dagstuhl, Germany, June 27 – July 2, 2010 Co-organized with David S. Johnson, Petra Mutzel, Peter Sanders.

10. 4th Workshop on "Algorithm and Data Structures", June 7–12, 2009, Bertinoro, Italy. Co-organized with Andrew Goldberg, Valerie King, Robert E. Tarjan.

11. "School on Graph Theory, Algorithms and Applications", Center "Ettore Majorana" for Scientific Culture, Erice (Italy), 8–16 September, 2008. Co-organized with Raffaele Cerulli, Andrew Goldberg, Robert E. Tarjan.

12. "Algorithm Engineering", Mathematisches Forsgungsinstitut Oberwolfach (Germany), 6–12 May 2007 (Oberwolfach Workshop). Co-organized with Petra Mutzel, Peter Sanders, Martin Skutella.

13. 2nd Workshop on "Algorithm and Data Structures", May 29 - June 4, 2005, Bertinoro, Italy. Co-organized with Andrew Goldberg.

14. Workshop on "Algorithm and Data Structures", June 23–28, 2003, Bertinoro, Italy. Co-organized with Camil Demetrescu.

15. "Summer School on Algorithm Engineering", Rome, Italy, September 10–12, 2001 Co-organized with Giovanni Rinaldi.

16. "Efficient Algorithms", Mathematisches Forsgungsinstitut Oberwolfach (Germany), 6–12 August 2000 (Oberwolfach Workshop). Co-organized with Susanne Albers, Torben Hagerup, Kurt Mehlhorn

PH.D. STUDENTS

Graduated

| 2001 | Camil Demetrescu, "Fully Dynamic Algorithms for Path Problems on Directed Graphs". Now Full Professor at "Sapienza" University of Rome. |

2001   Camil Demetrescu, "Fully Dynamic Algorithms for Path Problems on Directed Graphs". Now Full Professor at "Sapienza" University of Rome.

2003   Gianluigi Me, "Mobile transactions security". Now Lieutenant Colonel in the Italian Carabinieri police.

2004   Fabrizio Grandoni, "Exact Algorithms for Hard Graph Problems". Now Senior Researcher at IDSIA, University of Lugano, Switzerland.

2006   Maurizio A. Strangio, "Two-Party Cryptographic Protocols for Authentication and Key Agreement with Applications to Mobile Computing". Now Lieutenant Colonel in the Italian Carabinieri police.

2009   Fabio Dellutri, "Profiling Mobile Identities". Now Founder and CEO of the startup `voglioilruolo.it`.

2011   Antonio Grillo, "Trasferring Identities to Mobile Devices (TIMiD)". Now CEO at TrustMyPhone S.r.l.

2011   Alessandro Lentini, "TUBA: Total User Behavioural Authentication". Now Head of Consumer Solutions at TrustMyPhone S.r.l.

2011   Vittorio Ottaviani "Open BAR - A New Approach to Mobile Backup And Restore". Now Software Engineer at GTECH S.p.A.

2012   Rosamaria Bertè. "Triage techniques applied to Digital Forensics". Now Technical Manager at the Italian Corte dei Conti.

2014   Marco Querini, "A New System for Securizing Documents Through Their Entire Life Cycle". Now Senior Manager at SelfieWealth S.r.l.

2014   Fabio Marturana, "Device Classification in Digital Forensic Triage". Now Major in the Italian Carabinieri police.

2015   Federico Santaroni, "Reliability in public transport networks", now postdoc at Sapienza University

2017   Giovanni Bottazzi, "Botnets: Threats and Countermeasures". Now Major in the Italian Carabinieri police.

2017   Nilakantha Paudel, "Graph Algorithms for Analytics and Security", now postdoc at University of Rome Tor Vergata.

Current

2014–   Evgeniia Perehodko, expected 2018.

2015–   Nikos Parotsidis, expected 2019.

2015–   Leandro Ishi Soares De Lima (coadvised with Université Claude Bernard Lyon 1), expected 2019.

2016–   Aikaterini Karanasiou, expected 2020.

2017–   Giuseppe Chiapparo, expected 2021.

Member of Ph.D. Theses Committees

2017   "New Results on Hashing, Labeling Schemes and Algorithms ", Mathias Baek Tejs Knudsen, University of Copenhagen Denmark.

2015   "Algorithms for computing the 2-vertex-connected components and the 2-blocks of directed graphs", Raed Jaberi, Technische Universität Ilmenau, Germany.

2015   "Faster Approximation Algorithms for Partially Dynamic Shortest Paths Problems", Sebastian Krinninger, University of Vienna, Austria.

2015   "Dynamic Graph Algorithms for Connectivity Problems", Jakub Łącki, University of Warsaw, Poland.

2015   "Algorithms and Data Structures for Strings, Points and Integers", Søren Juhl Vind, Tecnical University of Denmark, Denmark.

2013   "Engineering Shortest-Path Algorithms for Dynamic Networks", Mattia D'Emidio, University of L'Aquila, Italy.

2012   "Complex Networks: Algorithms, Analysis and Models", Leonardo Lanzi, University of Florence, Italy.

2011   "Engineering Algorithms for Solving Geometric and Graph Problems on Large Data Sets", Adan Cosgaya Lozano, Dalhousie University, Halifax, Nova Scotia, Canada.

2010   "Data Structures Libraries", Leonor Frias, Universitat Politècnica de Catalunya, Barcelona, Spain.

2008   "Streaming Algorithms for Graph Problems" Andrea Ribichini, Department of Computer and System Science, University of Rome "La Sapienza", Italy.

2007   "Constraintes de Partitionnement de Graphs", Xavier Lorca, Ecole Nationale Supérieure des Techniques Industrielles et des Mines de Nantes, Nantes, France.

2007   "Hardware-Aware Algorithms and Data Structures", Gabriel Moruz, BRICS, Department of Computer Science, University of Aarhus, Denmark.

2006   "Dynamic and Static Graph Algorithms", Liam Roditty, School of Computer Science, Tel Aviv University, Israel.

2005   "Experimental Analysis of Graph Algorithms", Pompeo Faruolo, Department of Computer Science, University of Salerno, Italy.

2000   "Tracking Causality in Distributed Computations", Giovanna Melideo, Department of Computer and System Science, University of Rome "La Sapienza", Italy.

1999   "Computing with Trees", Stephen Alstrup, Department of Computer Science, University of Copenhagen, Denmark.

1997   "Designing Efficient Parallel Algorithms of Graph Problems", Weifa Liang, Department of Computer Science, Australian National University, Australia.

1997 "Dynamic computation", Thore Husfeldt, Department of Computer Science, University of Aarhus, Denmark.

1997 "Does the cubicity help to solve problems?", Tiziana Calamoneri, Department of Computer Science, University of Rome "La Sapienza", Italy.

Member of Habilitation Committees

1998 Dr. Karsten Weihe, Faculty of Mathematics and Computer Science, University of Konstanz, Germany.

TEACHING

Undergraduate (Bachelor) Courses

- "Algorithm Engineering" ("Ingegneria degli Algoritmi"), Laurea in Ingegneria Informatica, Università di Roma "Tor Vergata", 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18.
- "Introduction to Computer Science" ("Informatica"), Laurea in Economia e Management, LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18.
- "Algorithms, Data and Security", B.A. in Global Governance, Università di Roma "Tor Vergata", 2017-18.
- "Algorithms and Data Structures" ("Algoritmi e Strutture Dati"), Laurea in Ingegneria Informatica, Università di Roma "Tor Vergata", 2002-03, 2003-04, 2004-05, 2005-06, 2006-07, 2007-08.
- "Introduction to Computer Programming" ("Fondamenti di Informatica I"), Laurea in Ingegneria Informatica, Università di Roma "Tor Vergata", 1998-99, 1999-2000, 2000-01, 2001-02.
- "COMS W4231 Analysis of Algorithms I", Department of Computer Science, Columbia University, 2000-01.
- "Introduction to Computer Science" ("Informatica 2"), Laurea in Ingegneria Civile, Università di Roma "Tor Vergata", 2000-01.
- "Introduction to Databases" ("Basi di Dati"), Laurea in Ingegneria Informatica, Università di Roma "Tor Vergata", 1999-00.
- "Algorithms and Data Structures" ("Algoritmi e Strutture Dati"), Laurea in Informatica, Università "Ca' Foscari" di Venezia, 1997-98.
- "Algorithms and Data Structures Lab" ("Laboratorio di Algoritmi e Strutture Dati"), Laurea in Informatica, Università "Ca' Foscari" di Venezia, 1997-98.
- "Computer Architecture" ("Architettura degli Elaboratori I"), Laurea in Informatica, Università "Ca' Foscari" di Venezia, 1995-96, 1996-97.
- "Computer Architecture Lab" ("Laboratorio di Architettura degli Elaboratori I"), Laurea in Informatica, Università "Ca' Foscari" di Venezia, 1995-96, 1996-97.
- "Computer Architecture" ("Architettura degli Elaboratori I"), Laurea in Informatica, Università degli Studi di Salerno, 1994-95, 1995-96.
- "Introduction to Computer Programming" ("Fondamenti di Informatica II)", Diploma in Ingegneria Informatica ed Automatica, Università degli Studi di Roma "La Sapienza", 1993-94, 1994-95.
- "W1003-02 Introduction to Computer Programming", Department of Computer Science, Columbia University, New York, U.S.A., 1988-89.
- "S3131 Data Structures", Department of Computer Science, Columbia University, New York, U.S.A., 1987-88.

Graduate (Master) Courses

- "Web Algorithms" ("Algoritmi per il Web"), Laurea Magistrale in Ingegneria Informatica, Università di Roma "Tor Vergata", 2013-14, 2014-15, 2015-16, 2016-17, 2017-18.

- "Customer Intelligence e Logiche di Analisi dei Big Data", Laurea Magistrale in Marketing, LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli, 2017-18.
- "Computer and Internet Security" ("Sicurezza informatica e Internet"), Laurea Magistrale in Ingegneria Informatica, Università di Roma "Tor Vergata", 2011-12, 2012-13, 2013-14, 2014-15, 2015-16.
- "Computer and Network Security" ("Sicurezza nei sistemi informatici"), Laurea Specialistica/Magistrale in Ingegneria Informatica, Università di Roma "Tor Vergata", 2000-01, 2001-02, 2002-03, 2003-04, 2004-05, 2005-06, 2007-08, 2008-09, 2009-10, 2010-11.
- "Distributed Databases" ("Basi di Dati Distribuite"), Laurea Specialistica in Ingegneria Informatica, Università di Roma "Tor Vergata", 2000-01, 2001-02, 2002-03.

Postgraduate (PhD) Courses

- "Dynamic Graph Algorithms", Gran Sasso Science Institute, (10 hours), 2015-16.
- "Dynamic Graph Algorithms", Institute of Informatics, University of Warsaw, Poland (10 hours), 2015-16.
- "COMP670: Advanced Graph Algorithms", Department of Computer Science, Hong Kong University of Science & Technology, Hong Kong (30 hours), 1997-98.
- "Network Security" Max-Planck-Institut für Informatik. Saarbrücken, Germany (10 hours), 1996-97.
- "Network Security" ("Sicurezza su reti"), Dottorato di Ricerca in Informatica, Università degli Studi di Bologna, Padova e Venezia (20 hours), 1996-97.
- "Algorithm Engineering ("Ingegneria degli Algoritmi"), Scuola Nazionale dei Dottorati di Ricerca in Ingegneria Informatica ed Informatica (10 hours), 1996-97.
- "Randomized algorithms" ("Algoritmi randomizzati"), Dottorato di Ricerca in Informatica, Università degli Studi di Bologna, Padova e Venezia (20 hours), 1995-96.
- "Randomized algorithms" ("Algoritmi randomizzati"), Dottorati di Ricerca in Ingegneria Informatica ed Informatica, Università degli Studi di Roma "La Sapienza" (20 hours), 1995-96.
- "Dynamic Graph Algorithms", Department of Computer Science, Aarhus Universitet, Denmark (10 hours), 1994-95.
- "Dynamic Graph Algorithms", Department of Computer Science, University of Copenhagen, Denmark (10 hours), 1994-95.
- "Combinatorial algorithms" ("Algoritmi per problemi combinatori"), Dottorati di Ricerca in Ingegneria Informatica ed Informatica, Università degli Studi di Roma "La Sapienza" (20 hours), 1993-94.
- "Graph algorithms" ("Algoritmi per grafi"), Dottorato di Ricerca in Matematica Computazionale, Università degli Studi di Padova (20 hours), 1992-93.
- "Combinatorial algorithms" ("Algoritmi per problemi combinatori"), Dottorato di Ricerca in Informatica, Università degli Studi di Pisa (20 hours), 1992-93.

EVALUATOR/REVIEWER FOR FUNDING AGENCIES

European Union under FP7-ICT-2011 and FP6-IST-2007

US National Science Foundation (NSF)

Danish Council for Independent Research (DFF)

Danish Research Councils

Fund for Scientific Research (FNRS), Belgium

Israel Science Foundation (ISF)

Natural Sciences and Engineering Research Council of Canada (NSERC)

Research Grants Council of Hong Kong (RGC)

TALKS AND SEMINARS

Some universities and research institutions in which I have given talks (most of them more than once):

AT&T Bell Labs, Brooklyn Polytechnic, Brown University, Columbia University, Cornell University, ETH Zurich, Hong Kong University of Science and Technology, IASI-CNR Rome, IBM ECSEC Rome, IBM T.J. Watson Research Center, Max-Planck Institute für Informatik, Polytechnic of Milan, Seoul National University, Universität Bonn, Universität des Saarlandes, University of Aarhus, University of California at Santa Barbara, University of Copenhagen, University of Illinois at Chicago, University of L'Aquila, University of Maryland, University of Padova, University of Palermo, Université Paris-Dauphine, Université Paris Diderot, University of Pisa, University of Rochester, University of Rome "La Sapienza", University of Salerno, University of Trento, Yale University, Warsaw University.

PUBLICATIONS LIST

Books and Conference Proceedings

[1] G. F. Italiano, M. Schmidt (Eds.): *15th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems*, ATMOS 2015, September 17, 2015, Patras, Greece. OASICS 48, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik 2015, ISBN 978-3-939897-99-6.

[2] G. F. Italiano, G. Pighizzini, D. Sannella (Eds.): *Mathematical Foundations of Computer Science 2015 - 40th International Symposium*, MFCS 2015, Milan, Italy, August 24-28, 2015, Proceedings, Part I. *Lecture Notes in Computer Science 9234*, Springer 2015, ISBN 978-3-662-48056-4.

[3] G. F. Italiano, G. Pighizzini, D. Sannella (Eds.): *Mathematical Foundations of Computer Science 2015 - 40th International Symposium*, MFCS 2015, Milan, Italy, August 24-28, 2015, Proceedings, Part II. *Lecture Notes in Computer Science 9235*, Springer 2015, ISBN 978-3-662-48053-3

[4] G. F. Italiano, T. Margaria-Steffen, J. Pokorný, J.-J. Quisquater, R. Wattenhofer (Eds.): *SOFSEM 2015: 41st International Conference on Current Trends in Theory and Practice of Computer Science*, Proceedings, vol. 1. *Lecture Notes in Computer Science vol. 8939*, Springer 2015.

[5] G. F. Italiano, T. Margaria-Steffen, J. Pokorný, J.-J. Quisquater, R. Wattenhofer, R. Spanek, M. Rimnac (Eds.): *SOFSEM 2015: 41st International Conference on Current Trends in Theory and Practice of Computer Science*, vol. 2, Proceedings of Student Research Forum Papers and Posters, CEUR Workshop Proceedings 1326, CEUR-WS.org 2015

[6] H. L. Bodlaender, G. F. Italiano (Eds.): *Algorithms - ESA 2013 - 21st Annual European Symposium*, Sophia Antipolis, France, September 2-4, 2013. Proceedings. *Lecture Notes in Computer Science vol. 8125*, Springer 2013.

[7] P. van Emde Boas, F. C. A. Groen, G. F. Italiano, J. Nawrocki, H. Sack (Eds.) *SOFSEM 2013: Theory and Practice of Computer Science*, Proceedings, vol. 1. *Lecture Notes in Computer Science vol. 7741*, Springer 2012.

[8] P. van Emde Boas, F. C. A. Groen, G. F. Italiano, J. Nawrocki, H. Sack (Eds.) *SOFSEM 2013: Theory and Practice of Computer Science*, Proceedings, vol. 2. Institute of Computer Science AS CR, Prague 2013, ISBN 978-80-87136-15-7.

[9] J. van Leeuwen, G. F. Italiano, W. van der Hoek, C. Meinel, H. Sack, F. Plásil (Eds.) *Theory and Practice of Computer Science*, Proceedings, vol. 1. *Lecture Notes in Computer Science vol. 4362*, Springer-Verlag 2007.

[10] J. van Leeuwen, G. F. Italiano, W. van der Hoek, C. Meinel, H. Sack, F. Plásil (Eds.) *Theory and Practice of Computer Science*, Proceedings, vol. 2. Institute of Computer Science AS CR, Prague 2007, ISBN 80-903298-9-6.

[11] G. F. Italiano, E. Moggi, L. Laura (Eds.) *Theoretical Computer Science, 10th Italian Conference*, Proceedings, World Scientific 2007.

[12] C. Demetrescu, U. Ferraro Petrillo, I. Finocchi e G. F. Italiano. *Progetto di Algoritmi e Strutture Dati in Java.* ISBN 978-88-386-6374-1. McGraw-Hill, 2007 (in Italian).

[13] T. Calamoneri, I. Finocchi, G. F. Italiano (Eds.) *Algorithms and Complexity*, Proceedings. *Lecture Notes in Computer Science vol. 3998*, Springer-Verlag 2006.

[14] L. Caires, G. F. Italiano, L. Monteiro, C. Palamidessi, M. Yung (Eds.) *Automata, Languages and Programming*, Proceedings. *Lecture Notes in Computer Science vol. 3580*, Springer-Verlag 2005.

[15] C. Demetrescu, I. Finocchi e G. F. Italiano. *Algoritmi e Strutture Dati.* ISBN 88-386-6161-8. McGraw-Hill, 2004 (in Italian).

[16] L. Arge, G. F. Italiano, R. Sedgewick, *6th Workshop on Algorithm Engineering and Experimentation and 1st Workshop on Analytic Algorithmics and Combinatorics*, *SIAM* Proceedings, 2004.

[17] G. Bilardi, G. F. Italiano, A. Pietracaprina, G. Pucci (Eds.) *Algorithms – ESA '98*, Proceedings. *Lecture Notes in Computer Science vol. 1461*, Springer-Verlag 1998.

[18] G. F. Italiano, S. Orlando, *Algorithm Engineering: WAE '97*, Proceedings, 1997.

Journal Special Issues

[19] K. Adaricheva, H. K. Büning, G. F. Italiano, György Turan. *Special issue on 'Horn Formulas, Directed Hypergraphs, Lattices and Closure Systems: related formalisms and applications"*, *Theoretical Computer Science* vol. 658 (263), 2017.

[20] H. L. Bodlaender, M. T. Hajiaghayi, G. F. Italiano, *Special issue on the 21st Annual European Symposium on Algorithms*, *Algorithmica* vol. 73(4), 2015.

[21] G. F. Italiano, R. Petreschi, *Special issue on the 6th Int. Conf. on Algorithms and Complexity*, *Journal of Discrete Algorithms*, vol. 7(3), 2009.

[22] G. F. Italiano, C. Palamidessi, *Special issue on the 32nd Int. Coll. on Automata, Languages and Programming*, *Theoretical Computer Science*, vol. 380, 1–2 (2007).

[23] L. Arge, G. F. Italiano, *Special issue on the 6th Workshop on Algorithm Engineering and Experimentation*, *ACM Journal on Experimental Algorithmics* vol. 12, 2007.

[24] G. F. Italiano, A. Marchetti-Spaccamela, *Special Issue in honour of Giorgio Ausiello*, *Journal of Discrete Algorithms*, vol. 4 (3), September 2006.

[25] G. Bilardi, G. F. Italiano, *Special issue on the 6th European Symposium on Algorithms*, *Journal of Algorithms*, 49, 1 (2003).

[26] G. F. Italiano, *Special issue on Algorithm Engineering*, *Algorithmica* 30, 4 (2001).

[27] D. Eppstein, G. F. Italiano, *Festschrift for Zvi Galil*, *Journal on Complexity* 15 (1999).

[28] A. Goldberg, G. F. Italiano, *Special issue on the Workshop on Algorithm Engineering 1997*, *ACM Journal on Experimental Algorithmics* 3 (1998),

[29] G. Ausiello, G. F. Italiano, *Special issue on Dynamic and On-line Algorithms*, *Theoretical Computer Science* 130 (1), 1994.

Journal Publications

[30] S. Bhattacharya, M. Henzinger, G. F. Italiano, "Deterministic fully dynamic data structures for vertex cover and matching", to appear in *SIAM Journal on Computing*.

[31] S. Bhattacharya, M. Henzinger, G. F. Italiano, "Design of Dynamic Algorithms via Primal-Dual Schema", to appear in *Information and Computation*, special issue of ICALP 2015.

[32] L. Georgiadis, G. F. Italiano, L. Laura, N. Parotsidis, "2-Vertex Connectivity in Directed Graphs", to appear in *Information and Computation*, special issue of ICALP 2015.

[33] L. Georgiadis, G. F. Italiano, A. Karanasiou, C. Papadopoulos, N. Parotsidis, "Sparse certificates for 2-connectivity in directed graphs", *Theoretical Computer Science*, vol. 698, 40–66, 2017.

[34] L. Georgiadis, G. F. Italiano, L. Laura, N. Parotsidis, "2-Edge Connectivity in Directed Graphs", *ACM Trans. Algorithms*, vol. 13 (1): 9, 2016.

[35] G. Ausiello, P. G. Franciosa, G. F. Italiano, A. Ribichini, "On Resilient Graph Spanners", *Algorithmica*, vol. 74 (4), 1363–1385, 2016.

[36] D. Firmani, L. Georgiadis, G. F. Italiano, L. Laura, F. Santaroni, "Strong Articulation Points and Strong Bridges in Large Scale Graphs", *Algorithmica*, vol. 74 (3), 1123–1147, 2016.

[37] M. Querini, M. Gattelli, V. M. Gentile, G. F. Italiano, "A New System for Secure Handwritten Signing of Documents", *International Journal of Computer Science and Applications*, vol. 12(2), 37–56, 2015.

[38] M. Querini, G. F. Italiano, "Reliability and Data Density in High Capacity Color Barcodes", *Computer Science and Information Systems*, vol. 11(4):1595–1615, 2014.

[39] S. Salcedo-Sanz, M. Naldi, L. Carro-Calvo, L. Laura, A. Portilla-Figueras, G. F. Italiano, "A Traffic-based Evolutionary Algorithm for Network Clustering', *Applied Soft Computing*, vol. 13(11), 4303–4319, 2013.

[40] M. Querini, G. F. Italiano, "Facial Recognition with 2D Color Barcodes", *Computer Science and Information Systems*, vol. 10(1):78–97, 2013.

[41] U. Ferraro Petrillo, F. Grandoni, G. F. Italiano, "Data Structures Resilient to Memory Faults: An Experimental Study of Dictionaries", *ACM Journal on Experimental Algorithmics* vol. 18, 2013. Special Issue of SEA 2010.

[42] D. Breslauer, G. F. Italiano, "Near Real-Time Suffix Tree Construction via the Fringe Marked Ancestor Problem", *Journal of Discrete Algorithms*, vol. 18, 32–48, 2013. Special Issue of SPIRE 2011.

[43] N. Apollonio, M. Caramia, G. F. Italiano, "On a Facility Location Problem with Applications to Telediagnostics", *Optimization Letters* 7(6), 1179–1192, 2013.

[44] D. Breslauer, G. F. Italiano, "On Suffix Extensions in Suffix Trees", *Theoretical Computer Science*, vol. 457, 27–34, 2012.

[45] G. F. Italiano, L. Laura, F. Santaroni, "Finding strong bridges and strong articulation points in linear time", *Theoretical Computer Science*, vol. 447, 74–84, 2012. Special Issue of COCOA'10.

[46] M. Querini, A. Grillo, G. F. Italiano, A. Lentini, "2D Color Barcodes for Mobile Phones", *International Journal of Computer Science & Applications*, Special issue on Multimedia - Applications, vol. 8, Issue 1, 136–155, 2011.

[47] G. Cattaneo, P. Faruolo, U. Ferraro Petrillo, G. F. Italiano, "Maintaining Dynamic Minimum Spanning Trees: An Experimental Study", *Discrete Applied Mathematics*, vol. 158, no. 5, 404–425, 2010.

[48] M. Naldi, G. D'Acquisto, G. F. Italiano, "The value of location in keyword auctions", *Electronic Commerce Research and Applications*, vol. 9, 160–170, 2010. [1]

[49] G. Ausiello, P. G. Franciosa, G. F. Italiano, A. Ribichini, "Computing Graph Spanners in Small Memory: Fault-Tolerance and Streaming", *Discrete Mathematics, Algorithms and Applications*, vol. 2, no. 4 (2010) 591–605.

[50] I. Finocchi, F. Grandoni, G. F. Italiano, "Resilient Dictionaries", *ACM Transactions on Algorithms*, vol. 6, no. 1, 1–19, 2009.

[51] I. Finocchi, F. Grandoni, G. F. Italiano, "Optimal Resilient Sorting and Searching in the presence of Memory Faults", *Theoretical Computer Science*, Special Issue of ICALP'06, vol. 410, no. 44, 4457–4470, 2009.

[52] G. Ausiello, P. G. Franciosa, G. F. Italiano, "Small stretch (α,β)-spanners in the streaming model", *Theoretical Computer Science*, vol. 410, no. 36, 3406–3413, 2009.

[53] U. Ferraro Petrillo, I. Finocchi, G. F. Italiano, "The Price of Resiliency: A Case Study on Sorting with Memory Faults", *Algorithmica*, vol. 53, no 4, 597–620, 2009.

[54] G. Ausiello, C. Demetrescu, P. G. Franciosa, G. F. Italiano, A. Ribichini, "Graph Spanners in the Streaming Model: an Experimental Study", *Algorithmica*, vol. 55, no. 2, 346–374, 2009.

[55] I. Finocchi, G. F. Italiano, "Sorting and searching in faulty memories", *Algorithmica*, vol. 52, no. 3, pp. 309–332, 2008.

[56] C. Demetrescu, G. F. Italiano, "Maintaining Dynamic Matrices for Fully Dynamic Transitive Closure", *Algorithmica*, vol. 51, no. 4, pp. 387–427, 2008.

[57] M. Caramia, P. Dell'Olmo, G. F. Italiano, "Novel Local-Search-Based Approaches to University Examination Timetabling", *INFORMS Journal on Computing*, vol. 20, no. 1, pp. 86–99, 2008.

[58] I. Finocchi, F. Grandoni, G. F. Italiano, "Designing Reliable Algorithms in Unreliable Memories", *Computer Science Review*, vol. 1, no. 2, pp. 77–87, 2007.

[59] G. Ausiello, P. G. Franciosa, G. F. Italiano, "Small stretch spanners on dynamic graphs", *Journal of Graph Algorithms and Applications*, vol. 10, no. 2, 365–385, 2006.

[60] G. F. Italiano, S. Leonardi, G. Oriolo, "Design of trees in the hose model: the balanced case", *Operations Research Letters*, vol 34 (6), November 2006, pp. 601–606.

[61] C. Demetrescu, G. F. Italiano, "Experimental Analysis of Dynamic All Pairs Shortest Path Algorithms" *ACM Transactions on Algorithms* vol. 2 (4), October 2006, 578–601. Special Issue of SODA 2004.

---

[1] Paper selected for its quality to the 10th anniversary "virtual special issue" of the journal. A total of 14 papers were selected for this decennial issue.

[62] C. Demetrescu, G. F. Italiano, "Dynamic Shortest Paths and Transitive Closure: Algorithmic Techniques and Data Structures", *Journal of Discrete Algorithms*, vol 4 (3), September 2006, pp. 353–383.

[63] C. Demetrescu, G. F. Italiano, "Fully Dynamic All Pairs Shortest Paths with Real Edge Weights", *Journal of Computer and System Sciences*, vol 72 (5) August 2006, 813–837. Special Issue on FOCS 2001.

[64] M. Caramia, P. Dell'Olmo, G. F. Italiano, "Tuning a local search algorithm for graph coloring", *Journal of Discrete Algorithms*, vol. 4 (2), June 2006, 277-298.

[65] C. Demetrescu, G. F. Italiano, "Trade-Offs for Fully Dynamic Transitive Closure on DAGs: Breaking Through the $O(n^2)$ Barrier", *Journal of the ACM*, vol. 52, no. 2, March 2005, 147–156.

[66] C. Demetrescu, G. F. Italiano, "A new approach to dynamic all pairs shortest paths". *Journal of the ACM*, vol. 51, no. 6, November 2004, 968–992.

[67] C. Demetrescu, I. Finocchi, G. F. Italiano, "Algorithm Engineering", *Algorithms Column, EATCS Bullettin*, vol. (2003).

[68] A. Caprara, G. F. Italiano, G. Mohan, A. Panconesi, A. Srinivasan, "Wavelength Rerouting in Optical Networks, or the Venetian Routing Problem", *J. Algorithms*, vol. 45 (2002), pp. 93–125.

[69] G. Cattaneo, U. Ferraro Petrillo, G. F. Italiano, "CATAI: Cooperative Algorithm and Data Types Animation over the Internet", *Journal of Visual Languages & Computing*, Vol. 13, No. 4, Aug 2002, pp. 391-419.

[70] D. Frigioni, G. F. Italiano, "Dynamically switching vertices in planar graphs". *Algorithmica*, vol. 28, n. 1, (2000), pp. 76–103.

[71] A. Vigneron, L. Gao, M. Golin, G. F. Italiano, B. Li, "An algorithm for finding a k-median in a directed tree", *Information Processing Letters*, vol. 74 (2000), 81–88.

[72] G. Cattaneo, G. F. Italiano, "Algorithm Engineering", *ACM Computing Surveys*, vol. 31, issue 3es (1999), Article 3.

[73] R. Grossi, G. F. Italiano, "Efficient splitting and merging algorithms for order decomposable problems", *Information and Computation*, vol. 154 (1999), 1–33.

[74] Z. Galil, G. F. Italiano, N. Sarnak, "Fully dynamic planarity testing with applications", *Journal of the ACM*, vol. 48 (1999), 28–91.

[75] D. Eppstein, Z. Galil, G. F. Italiano, T. H. Spencer, "Separator based sparsification II: edge and vertex connectivity", *SIAM Journal on Computing*, vol. 28 (1999), 341–381.

[76] G. F. Italiano, R. Ramaswami, "Maintaining spanning trees of small diameter", *Algorithmica* (1998) 22: 275–304.

[77] D. Eppstein, Z. Galil, G. F. Italiano, A. Nissenzweig, "Sparsification – A technique for speeding up dynamic graph algorithms", *Journal of the ACM*, vol. 44 (1997), 669–696.

[78] D. Alberts, G. Cattaneo, G. F. Italiano, "An empirical study of dynamic graph algorithms", *ACM Journal on Experimental Algorithmics*, vol. 2 (1997).

[79] D. Eppstein, Z. Galil, G. F. Italiano, T. H. Spencer, "Separator based sparsification I: planarity testing and minimum spanning trees", *Journal of Computer and System Science*, Special issue of STOC 93, vol. 52, no. 1 (1996), 3–27.

[80] D. Giammarresi, G. F. Italiano, "Decremental 2- and 3-connectivity on planar graphs", *Algorithmica* vol. 16, no. 3 (1996), 263–287.

[81] A. Apostolico, G. F. Italiano, G. Gambosi, M. Talamo, "The set union problem with unlimited backtracking", *SIAM Journal on Computing*, vol. 23, no. 1 (1994), 50–70.

[82] Z. Galil, G. F. Italiano, "Maintaining the 3-edge-connected components of a graph on-line", *SIAM Journal on Computing*, vol. 22, no. 1 (1993), 11–28.

[83] Z. Galil, G. F. Italiano, "Fully dynamic algorithms for 2-edge connectivity", *SIAM Journal on Computing*, vol. 21, no. 6 (1992), 1047–1069.

[84] D. Eppstein, Z. Galil, R. Giancarlo, G. F. Italiano, "Sparse dynamic programming I : linear cost functions", *Journal of the ACM*, vol. 39, no. 3 (1992), 519–545.

[85] D. Eppstein, Z. Galil, R. Giancarlo, G. F. Italiano, "Sparse dynamic programming II : convex and concave cost functions", *Journal of the ACM*, vol. 39, no. 3 (1992), 546–567.

[86] G. Ausiello, G. F. Italiano, A. Marchetti Spaccamela, U. Nanni, "On-line computation of minimal and maximal length paths", *Theoretical Computer Science*, vol. 95, no. 2 (1992), 245–261.

[87] D. Eppstein, G. F. Italiano, R. Tamassia, R. E. Tarjan, J. Westbrook, M. Yung, "Maintenance of a minimum spanning forest in a dynamic plane graph", *Journal of Algorithms*, vol. 13, no. 1 (1992), 33–54.

[88] G. Gambosi, G. F. Italiano, M. Talamo, "The set union problem with dynamic weighted backtracking", *BIT*, vol. 31, no. 3 (1991), 382–393.

[89] G. Ausiello, G. F. Italiano, A. Marchetti Spaccamela, U. Nanni, "Incremental algorithms for minimal length paths", *Journal of Algorithms*, vol. 12, no. 4 (1991), 615–638.

[90] Z. Galil, G. F. Italiano, "Reducing edge connectivity to vertex connectivity", *Sigact News*, vol. 22, n. 1 (1991), 57–61.

[91] Z. Galil, G. F. Italiano, "Data structures and algorithms for disjoint set union problems", *ACM Computing Surveys*, vol. 23, no. 3 (1991), 319–344.

[92] Z. Galil, G. F. Italiano, "A note on set union with arbitrary deunions", *Information Processing Letters*, vol. 37, n. 6 (1991), 331–335.

[93] G. Ausiello, G. F. Italiano, "On-line algorithms for polynomially solvable satisfiability problems", *Journal of Logic Programming*, vol. 10, n. 1 (1991), 69–90.

[94] C. Arbib, G. F. Italiano, A. Panconesi, "Predicting deadlock in store-and-forward networks", *Networks*, vol. 20, n. 7 (1990), 861–881.

[95] G. Ausiello, G. F. Italiano, U. Nanni, "Dynamic maintenance of directed hypergraphs", *Theoretical Computer Science* vol. 72, n. 2–3 (1990), 97–117.

[96] G. Gambosi, G. F. Italiano, M. Talamo, "Worst-case analysis of the set union problem with extended backtracking", *Theoretical Computer Science* vol. 68, n. 1 (1989), 57–70.

[97] G. F. Italiano, "Finding paths and deleting edges in directed acyclic graphs", *Information Processing Letters* vol. 28, n. 1 (1988), 5–11.

[98] G. F. Italiano, "Amortized efficiency of a path retrieval data structure", *Theoretical Computer Science* vol. 48, n. 2–3 (1986), 273–281.

Journal Submissions

[99] L. Allulli, D. Firmani, G. F. Italiano, L. Laura, F. Santaroni, "Exploiting Real-Time Data in Public Transport Journey Planners: a Case Study", submitted for publication.

Refereed Encyclopedia and Handbook Chapters

[100] C. Demetrescu, D. Eppstein, Z. Galil, G. F. Italiano, "Dynamic Graph Algorithms", Chapter 9, *Algorithms and Theory of Computation Handbook: General Concepts and Techniques*, 2nd Edition (Mikhail J. Atallah and Marina Blanton Eds.), CRC Press, 2009, pp. 9.1–9.28

[101] G. F. Italiano, R. Raman, "Topics in Data Structures", Chapter 5, *Algorithms and Theory of Computation Handbook: General Concepts and Techniques*, 2nd Edition (Mikhail J. Atallah and Marina Blanton Eds.), CRC Press, 2009, pp. 5.1–5.29

[102] C. Demetrescu, G. F. Italiano, Decremental All-Pairs Shortest Paths", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 244–246.

[103] C. Demetrescu, G. F. Italiano, Fully Dynamic All-Pairs Shortest Paths", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 348–350.

[104] G. F. Italiano, Fully Dynamic Connectivity", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 351–353.

[105] G. F. Italiano, "Fully Dynamic Higher Connectivity", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 355–357.

[106] G. F. Italiano, "Fully Dynamic Higher Connectivity for Planar Graphs", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 357–359.

[107] G. F. Italiano, "Fully Dynamic Minimum Spanning Trees", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 359–361.

[108] G. F. Italiano, "Fully Dynamic Planarity Testing", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 361–363.

[109] C. Demetrescu, G. F. Italiano, "Single-Source Fully Dynamic Reachability", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 878–879.

[110] C. Demetrescu, G. F. Italiano, "Trade-offs for Dynamic Graph Problems", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 994–997.

[111] C. Demetrescu, G. F. Italiano, "Visualization Techniques for Algorithm Engineering", *Encyclopedia of Algorithms*, (Ming Yang Kao Ed.), Springer, 2008, pp. 1036–1039.

[112] C. Demetrescu, I. Finocchi, G. F. Italiano, "Dynamic Trees", Chapter 21, *Handbook of Data Structures and Applications*, (Dinesh P. Mehta and Sartaj Sahni Eds.), CRC Press, 2004.

[113] C. Demetrescu, I. Finocchi, G. F. Italiano, "Dynamic Graphs", Chapter 22, *Handbook of Data Structures and Applications*, (Dinesh P. Mehta and Sartaj Sahni Eds.), CRC Press, 2004.

[114] C. Demetrescu, I. Finocchi, G. F. Italiano, "Dynamic Graphs", Chapter 10.2, *Handbook of Graph Theory*, (Jonathan Gross and Jay Yellen Eds.), CRC Press, 2003, 985–1014.

[115] G. F. Italiano, R. Raman, "Topics in data structures", Chapter 5, *Algorithms and Theory of Computation Handbook*, (Mikhail J. Atallah Ed.), CRC Press, 1999.

[116] D. Eppstein, Z. Galil, G. F. Italiano, "Dynamic graph algorithms", Chapter 8, *Algorithms and Theory of Computation Handbook*, (Mikhail J. Atallah Ed.), CRC Press, 1999.

[117] A. Apostolico, G. F. Italiano, "Backtracking", *Wiley Encyclopedia of Electrical and Electronics Engineering*, John Wiley & Sons, vol. 2, 1999, 187–197.

Refereed Book Chapters

[118] C. Demetrescu, G. F. Italiano, "The Quest for the Shortest Route", *The Power of Algorithms – Inspirations and Examples in Everyday Life*, Springer, 2013. G. Ausiello, R. Petreschi Eds.

[119] F. Marturana, S. Tacconi, G. F. Italiano, "A Machine Learning-based approach to Digital Triage. In Handbook of Digital Forensics of Multimedia Data and Devices", Anthony T.S. Ho and Shujun Li editors, John Wiley & Sons, Inc., ISBN 978-1-1186-4050-0, 2014.

[120] F. Marturana, S. Tacconi, G. F. Italiano, "A Forensic-as-a-Service Delivery Platform for Law Enforcement Agencies", *Cybercrime and Cloud Forensics: Applications for Investigation Processes*, K. Ruan, IGI Global, ISBN 978-1-4666-2662-1, 2013.

[121] C. Demetrescu, G. F. Italiano, "La ricerca della via più breve", *L'informatica invisibile*, Mondadori Sapienza, 2011, pagg. 81–103. G. Ausiello, R. Petreschi Eds. (In Italian).

[122] C. Demetrescu, I. Finocchi, G. F. Italiano, "Algorithm Engineering", *Current Trends in Theoretical Computer Science: The Challenge of the New Century*, Vol. 1, Algorithms and Complexity, World Scientific Publ. Co., 2004.

[123] C. Demetrescu, I. Finocchi, G. F. Italiano, S. Näher, "Tools and Techniques for Algorithm Visualization", *Experimental Algorithmics – From Algorithm Design to Robust and Efficient Software*, *Lecture Notes in Computer Science* vol. 2547, Springer-Verlag, 2002, pagg. 24–50. R. Fleischer, B. Moret, E.M. Schmidt Eds.

[124] R. Grossi, G. F. Italiano, "Efficient cross-trees for external memory", *External Memory Algorithms* (James M. Abello and Jeffrey S. Vitter Eds.), *DIMACS Series in Discrete Mathematics and Theoretical Computer Science* vol. 50, pp. 87–106, American Mathematical Society, 1999.

[125] D. Eppstein, Z. Galil, R. Giancarlo, G. F. Italiano, "Efficient Algorithms for Sequence Analysis", *Sequences: Methods in Communications, Security and Computer Science* (R. Capocelli, A. De Santis, U. Vaccaro eds.), Springer-Verlag, Berlin, 1993, pagg. 225–244.

Reviewed Conference Publications

[126] L. Georgiadis, G. F. Italiano, N. Parotsidis, "Incremental strong connectivity and 2-connectivity in directed graphs", *Proc 13th Latin American Theoretical INformatics Symposium* (LATIN 2018), Buenos Aires, Argentina, April 16–19, 2018.

[127] G. F. Italiano, Y. Manoussakis, K. T. Nguyen and H. P. Pham, "Maximum colorful cycles in vertex-colored graphs". *Proc 13th International Computer Science Symposium in Russia* (CSR 2018), Moscow, Russia, June 6âĂŞ-10, 2018.

[128] L. Georgiadis, G. F. Italiano, A. Karanasiou, N. Parotsidis and N. Paudel, "Computing 2-Connected Components and Maximal 2-Connected Subgraphs in Directed Graphs: An Experimental Study". *Proc 20th Algorithm Engineering and Experiments* (ALENEX 2018), New Orleans, USA, January 7–8, 2018.

[129] J. Cohen, G. F. Italiano, Y. Manoussakis, K. T. Nguyen and H. P. Pham, "Tropical paths in vertex-colored graphs". *Proc. 11th Annual International Conference on Combinatorial Optimization and Applications* (COCOA 2017) Shanghai, China, December 16–18, 2017.

[130] J. Holm, G. F. Italiano, A. Karczmarz, J. Łącki, E. Rotenberg, P. Sankowski, "Contracting a Planar Graph Efficiently". *Proc. 25th Annual European Symposium on Algorithms* (ESA 2017), Vienna, Austria, September 4–8, 2017.

[131] L. Georgiadis, T. D. Hansen, G. F. Italiano, S. Krinninger, N. Parotsidis, "Decremental dominators with applications". *Proc. 44th International Colloquium on Automata, Languages, and Programming* (ICALP 2017), Warsaw, Poland, July 10–14, 2017.

[132] L. Georgiadis, D. Graf, G. F. Italiano, N. Parotsidis, P. Uznański. "All-pair 2-Reachability in $O(n^\omega \log n)$ time". *Proc. 44th International Colloquium on Automata, Languages, and Programming* (ICALP 2017), Warsaw, Poland, July 10–14, 2017.

[133] G. F. Italiano, A. Karczmarz, J. Łącki, P. Sankowski, "Decremental Single-Source Reachability in Planar Digraphs". *Proc. 49th Annual ACM Symposium on the Theory of Computing* (STOC 2017), Montreal, Canada, June 19–23, 2017.

[134] L. Georgiadis, G. F. Italiano, A. Karanasiou, "Approximating the smallest 2-vertex-connected spanning subgraph via low-high order". *Proc. 16th International Symposium on Experimental Algorithms* (SEA 2017), London, UK, June 21–23, 2017.

[135] V. Acuña, R. Grossi, G. F. Italiano, L. Lima, R. Rizzi, G. Sacomoto, M.-F. Sagot, B. Sinaimeri, "On bubble generators in directed graphs". *Proc. 43rd International Workshop on Graph-Theoretic Concepts in Computer Science* (WG17), Eindhoven, The Netherlands, June 21–23, 2017.

[136] G. F. Italiano, N. Parotsidis, E. Perekhodko, "What's Inside a Bow-Tie: Analyzing the Core of the Web and of Social Networks", *Proc. 2017 International Conference on Information System and Data Mining* (ICISDM 2017), Charleston, SC, USA, April 01–03, 2017, 39–43.

[137] G. Bottazzi, G. F. Italiano, G. G. Rutigliano. "An Operational Framework for Incident Handling". *Proc. 1st Italian Conference on Cybersecurity* (ITASEC17), Venice, Italy, January 17–20, 2017, 126–135.

[138] L. Georgiadis, G. F. Italiano, N. Parotsidis, "Strong Connectivity in Directed Graphs under Failures", *Proc. ACM-SIAM Symposium on Discrete Algorithms* (SODA 2017), Barcelona, Spain, January 16–19, 2017, 1880–1899.

[139] S. Chechik, T. D. Hansen, G. F. Italiano, V. Loitzenbauer, N. Parotsidis, "Faster Algorithms for Computing Maximal 2-Connected Subgraphs in Sparse Directed Graphs", *Proc. ACM-SIAM Symposium on Discrete Algorithms* (SODA 2017), Barcelona, Spain, January 16–19, 2017, 1900–1918.

[140] N. Paudel, L. Georgiadis, G. F. Italiano, "Computing critical nodes in directed graphs", *Proc 19th Algorithm Engineering and Experiments* (ALENEX 2017), Barcelona, Spain, January 17–18, 2017, 43–57. [2]

[141] S. Chechik, T. D. Hansen, G. F. Italiano, J. Łącki, N. Parotsidis, "Decremental Single-Source Reachability and Strongly Connected Components in $\widetilde{O}(m\sqrt{n})$ Total Update Time" *Proc. 57th*

---

[2] Selected as one of the best papers for the conference special issue in the *ACM Journal on Experimental Algorithmics*.

Annual IEEE Symposium on Foundations of Computer Science (FOCS 2016), New Brunswick, New Jersey, October 9–11, 2016, 315–324.

[142] L. Georgiadis, G. F. Italiano, N. Parotsidis, "2-Connectivity in Directed Graphs", (Invited Talk), *Proc. 24th Annual European Symposium on Algorithms* (ESA 2016), Aarhus, Denmark August 22–24, 2016, 1–14.

[143] G. Bottazzi, G. F. Italiano, G. G. Rutigliano, "Frequency Domain Analysis of Large-Scale Proxy Logs for Botnet Traffic Detection", *Proc. 9th International Conference on Security of Information and Networks*, Newark, NJ, USA, July 20-22, 2016, 76–80.

[144] L. Georgiadis, G. F. Italiano, N. Parotsidis, "Incremental 2-Edge-Connectivity in Directed Graphs", *Proc. 43rd International Colloquium on Automata, Languages and Programming* (ICALP 2016), July 12–15, 2016, Rome, Italy, 49:1–49:15.

[145] L. Georgiadis, G. F. Italiano, A. Karanasiou, C. Papadopoulos, N. Parotsidis, "Sparse Subgraphs for 2-Connectivity in Directed Graphs", *Proc. 15th International Symposium on Experimental Algorithms* (SEA 2016), June 5–8, 2016, St. Petersburg, Russia, 150–166.

[146] N. Paudel, M. Querini, G. F. Italiano, "Handwritten Signature Verification for Mobile Phones". *Proc. 2nd International Conference on Information Systems Security and Privacy* (ICISSP 2016), Rome, Italy, February 19–21, 2016, 46–52.

[147] L. Georgiadis, G. F. Italiano, C. Papadopoulos, N. Parotsidis, "Approximating the Smallest Spanning Subgraph for 2-Edge-Connectivity in Directed Graphs". *Proc. 23rd Annual European Symposium on Algorithms* (ESA 2015), September 14-16 2015, Patras, Greece, 582–594

[148] G. Bottazzi, G. F. Italiano, "Fast Mining of Large-Scale Logs for Botnet Detection: A Field Study'. *Proc. 13th IEEE International Conference on Dependable, Autonomic and Secure Computing*, Liverpool, United Kingdom, October 26-28, 2015, 1989–1996.

[149] S. Bhattacharya, M. Henzinger, G. F. Italiano, "Design of Dynamic Algorithms via Primal-Dual Schema". *Proc. 42nd International Colloquium on Automata, Languages, and Programming* (ICALP 2015), 6-10 July 2015, Kyoto, Japan, 206–218. [3]

[150] L. Georgiadis, G. F. Italiano, L. Laura, N. Parotsidis, "2-Vertex Connectivity in Directed Graphs". *Proc. 42nd International Colloquium on Automata, Languages, and Programming* (ICALP 2015), 6-10 July 2015, Kyoto, Japan, 605–617. [4]

[151] S. Bhattacharya, M. Henzinger, G. F. Italiano, "Deterministic fully dynamic data structures for vertex cover and matching". *Proc. 26th ACM-SIAM Symposium on Discrete Algorithms* (SODA 2015), San Diego, USA, 4–6 January 2015, 785–804.

[152] L. Georgiadis, G. F. Italiano, L. Laura, N. Parotsidis, "2-Edge Connectivity in Directed Graphs". *Proc. 26th ACM-SIAM Symposium on Discrete Algorithms* (SODA 2015), San Diego, USA, 4–6 January 2015, 1988–2005.

[153] W. Di Luigi, L. Georgiadis, G. F. Italiano, L. Laura, N. Parotsidis, "2-Connectivity in Directed Graphs: An Experimental Study". *Proc 17th Algorithm Engineering and Experiments* (ALENEX 2015), San Diego, USA, 5 January 2015, 173–187.

[154] D. Firmani, G. F. Italiano, L. Laura: The (not so) Critical Nodes of Criminal Networks. *SocInfo Workshop on Criminal Network Analysis and Mining* (CRIMENET 2014), Barcelona, Spain, November 11, 2014, 87–96.

[155] D. Delling, G. F. Italiano, T. Pajor, F. Santaroni, "Better transit routing by exploiting vehicle GPS data". *Proc. 7th ACM SIGSPATIAL International Workshop on Computational Transportation Science* (IWCTS 2014), November 4, 2014, Dallas, TX, USA, 31–40.

[156] M. Querini, M. Gattelli, V. M. Gentile, G. F. Italiano, "Handwritten Signature Verification with 2D Color Barcodes". *Proc. 2014 Federated Conference on Computer Science and Information Systems* (FedCSIS 2014), Warsaw, Poland, 7–10 September, 2014, pages 701–708. IEEE 2014. [5]

---

[3] Selected as one of the best papers for the conference special issue in the journal *Information and Computation*.

[4] Selected as one of the best papers for the conference special issue in the journal *Information and Computation*.

[5] Selected as one of the best papers for the conference special issue in the *International Journal of Computer Science and Applications*.

[157] D. Firmani, G. F. Italiano, M. Querini, "Engineering Color Barcode Algorithms for Mobile Applications". *Proc. 13th International Symposium on Experimental Algorithms*, (SEA 2014), June 29– July 1st 2014, Copenhagen, Denmark, 211–222.

[158] L. Allulli, G. F. Italiano, F. Santaroni, "Exploiting GPS Data in Public Transport Journey Planners". *Proc. 13th International Symposium on Experimental Algorithms*, (SEA 2014), June 29– July 1st 2014, Copenhagen, Denmark, 295–306.

[159] M. Querini, G. F. Italiano, "Color Classifiers for 2D Color Barcodes". *Proc. 2013 Federated Conference on Computer Science and Information Systems* (FedCSIS 2013), Kraków, Poland, September 8-11, 2013. **Best Paper Award** in the conference. [6]

[160] D. Firmani, G. F. Italiano, L. Laura, F. Santaroni, "Is Timetabling Routing Always Reliable for Public Transport?", *Proc. 13th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems* (ATMOS 2013), September 5, 2013, Sophia Antipolis, France, 15–26.

[161] G. Ausiello, P. G. Franciosa, G. F. Italiano, A. Ribichini, "On resilient graph spanners", *Proc. 23rd Annual European Symposium on Algorithms* (ESA 2013), Sophia Antipolis, France, 2–6 September, 2013, 85–96.

[162] L. Georgiadis, G. F. Italiano, L. Laura, F. Santaroni, "An Experimental Study of Dynamic Dominators", *Proc. 22nd Annual European Symposium on Algorithms* (ESA 2012), September 9-14 2012, Ljubljana, Slovenia, 491–502.

[163] M. Querini, G. F. Italiano, "Facial Biometrics for 2D Barcodes". *Proc. 2012 Federated Conference on Computer Science and Information Systems* (FedCSIS 2012), Wroclaw, Poland, September 9-12, 2012, 755-762. [7]

[164] S. Salcedo-Sanz, L. Carro-Calvo, A. Portilla-Figueras, M. Naldi, L. Laura, G. F. Italiano, "Traffic vs Topology in Network Clustering: Does it Matter?". *Proc. 8th International Wireless Communications and Mobile Computing Conference* (IWCMC 2012), Limassol, Cyprus, August 27-31, 2012.

[165] D. Firmani, G. F. Italiano, L. Laura, A. Orlandi, F. Santaroni, "Computing Strong Articulation Points and Strong Bridges in Large-Scale Graphs". *Proc. 11th International Symposium on Experimental Algorithms*, (SEA 2012), June 9–12 2012, Bordeaux, France, 195–207.

[166] G. Ausiello, G. F. Italiano, L. Laura, U. Nanni, F. Sarracco, "Structure Theorems for Optimum Hyperpaths in Directed Hypergraphs". *Proc. 2nd International Symposium on Combinatorial Optimization*, (ISCO 2012), April 19–21 2012, Athens, Greece, 1–14.

[167] G. F. Italiano "Strong Bridges and Strong Articulation Points of Directed Graphs". *Proc. 38th International Conference on Current Trends in Theory and Practice of Computer Science* (SOFSEM 2012), January 21-27, 2012, Špindlerův Mlýn, Czech Republic. *Lecture Notes in Computer Science*, vol. 7147, 43.

[168] D. Breslauer, G. F. Italiano, "Near Real-Time Suffix Tree Construction via the Fringe Marked Ancestor Problem", *Proc. 18th International Symposium on String Processing and Information Retrieval* (SPIRE 2011), Pisa, Italy, October 17–21, 2011. *Lecture Notes in Computer Science*, vol. 7024, 156–167. **Best Paper Award** in the conference. [8]

[169] D. Breslauer, G. F. Italiano, "On Suffix Extensions in Suffix Trees", *Proc. 18th International Symposium on String Processing and Information Retrieval* (SPIRE 2011), Pisa, Italy, October 17–21, 2011. *Lecture Notes in Computer Science*, vol. 7024, 301–312.

[170] S. Tortora, D. Cannone, M. Giovacchini, G. F. Italiano, M. Naldi, A. Sindico, "Distributed Simulation of EW Command and Control Scenarios", *Proc. Int. Defense and Homeland Security Simulation Workshop* (DHSS 2011), Rome, Italy, 12–14 September 2011, 71–76.

[171] D. Cannone, G. F. Italiano, M. Naldi, A. Brancaleoni, "A simulator of a mobile ad-hoc network in a hostile environment", *Proc. 1st International Conference on Simulation and Modeling Method-*

---

[6]Selected as one of the best papers for the conference special issue in the journal *Computer Science and Information Systems*.
[7]Selected as one of the best papers for the conference special issue in the *International Journal of Computer Science and Applications*.
[8]Selected as one of the best papers for the conference special issue in the *Journal of Discrete Algorithms*.

ologies, Technologies and Applications (SIMULTECH 2011), Noordwijkerhout, The Netherlands, 29–31 July, 2011.

[172]   S. Salcedo-Sanz, L. Carro-Calvo, A. Portilla-Figueras, M. Naldi, L. Laura, G. F. Italiano, "An Evolutionary Algorithm for Network Clustering through Traffic Matrices". *Proc. 7th International Wireless Communications and Mobile Computing Conference* (IWCMC 2011), Istanbul, Turkey, July 5-8, 2011, 1580–1584.

[173]   G. F. Italiano, Y. Nussbaum, P. Sankowski, C. Wulff-Nilsen, "Improved algorithms for min cut and max flow in undirected planar graphs". *Proc. 43rd ACM Symposium on Theory of Computing* (STOC 2011), San Jose, California, USA, June 6-8, 2011, 313–322.

[174]   M. Naldi, A. Pavignani, A. Grillo, A. Lentini, G. F. Italiano, "The Competitor Busting strategy in keyword auctions: who's worst hit?", *Proc. 9th Annual Conference on Communication Networks and Services Research* (CNSR 2011), Ottawa, Ontario, Canada, May 2–4, 2011, IEEE Computer Society Press, 153–160.

[175]   M. Naldi, A. Pavignani, A. Grillo, A. Lentini, G. F. Italiano, "A model for the dynamics of bidders in the simulation of keyword auctions" *Proc. 12th International Conference on Computer Modelling and Simulation* (UKSIM 2011), Cambridge, UK, March 30 – April 1st, 2011, 440–445.

[176]   V. Ottaviani, A. Lentini, A. Grillo, S. Di Cesare, G. F. Italiano, "Shared Backup & Restore", *Proc. 4th IFIP International Conference on New Technologies, Mobility and Security* (NTMS 2011), Paris, France, February 7–10, 2011, 1–5 .

[177]   G. F. Italiano, L. Laura, F. Santaroni, "Finding strong articulation points and strong bridges in linear time", *Proc. 4th Annual International Conference on Combinatorial Optimization and Applications* (COCOA'10) , Big Island, Hawaii, USA, December 18-20, 2010. *Lecture Notes in Computer Science*, vol. 6508, 157–169.[9]

[178]   A. Grillo, A. Lentini, V. Ottaviani, G. F. Italiano, F. Battisti, "SAVED: Secure Android Value addED services", *Proc. 2nd International ICST Conference on Mobile Computing, Applications, and Services* (MobiCASE 2010), Santa Clara, CA, USA, October 25-28, 2010.

[179]   A. Grillo, A. Lentini, M. Querini, G. F. Italiano, "High Capacity Colored Two Dimensional Codes", *Proc. International Multiconference on Computer Science and Information Technology* (IMCSIT 2010), Wisla, Poland, October 18-20, 2010, 709–716. [10].

[180]   G. Ausiello, P. G. Franciosa, G. F. Italiano, A. Ribichini, "Computing Graph Spanners in Small Memory: Fault-Tolerance and Streaming", *Proc. 6th Annual International Computing and Combinatorics Conference* (COCOON 2010), Nha Trang, Vietnam, July 19 – 21, 2010, 160–172 [11].

[181]   L. Laura, M. Naldi, G. F. Italiano, "Traffic-based Network Clustering", *Proc. 6th International Wireless Communications and Mobile Computing Conference* (IWCMC 2010), Caen, France, June 28 - July 2, 2010, 321-325.

[182]   G. F. Italiano, "Resilient Algorithms and Data Structures", INVITED LECTURE, *Proc. 7th International Conference on Algorithms and Complexity* (CIAC 2010), Rome, Italy, May 26-28, 2010. *Lecture Notes in Computer Science* vol. 6078, Springer-Verlag, Berlin, 2010, 13–24.

[183]   U. Ferraro Petrillo, I. Finocchi, G. F. Italiano, "Experimental Study of Resilient Algorithms and Data Structures", INVITED LECTURE, *Proc. 4th International Symposium on Experimental Algorithms* (SEA 2010), Ischia, Italy, May 20-22 2010, 1–12.

[184]   U. Ferraro Petrillo, F. Grandoni, G. F. Italiano, "Data Structures Resilient to Memory Faults: An Experimental Study of Dictionaries", *Proc. 4th International Symposium on Experimental Algorithms* (SEA 2010), Ischia, Italy, May 20-22 2010, 398-410[12].

[185]   A. Grillo, A. Lentini, G. Naldi, G. F. Italiano, "Penalized Second Price: A New Pricing Algorithm for Advertising in Search Engines", *Proc. 8th Annual Conference on Communication*

---

[9]Selected as one of the best papers for the conference special issue in the journal *Theoretical Computer Science*.

[10]Selected as one of the best papers for the conference special issue in the *International Journal of Computer Science and Applications*.

[11]Selected as one of the best papers for the conference special issue in the journal *Discrete Mathematics, Algorithms and Applications*.

[12]Selected as one of the best papers for the conference special issue in the *ACM Journal on Experimental Algorithmics*.

Networks and Services Research (CNSR 2010), Montreal, Canada, May 11–14, 2010, 207-214, IEEE Computer Society Press.

[186] A. Distefano, A. Grillo, A. Lentini, G. F. Italiano, "SecureMyDroid: Enforcing Security in the Mobile Devices Lifecycle", *Proc. 6th Annual Cyber Security and Information Intelligence Research Workshop* (CSIIRW 2010), Oak Ridge, TN, USA, April 21 - 23, 2010, 27:1–4.

[187] F. Dellutri, L. Laura, V. Ottaviani, G. F. Italiano, " Extracting Social Networks from Seized Smartphones and Web Data", *Proc. 1st IEEE Int. Workshop on Information Forensics and Security* (WIFS 09), London, UK, December 6–9, 2009, 101–105 .

[188] F. Dellutri, V. Ottaviani, D. Bocci, G. F. Italiano, G. Me, "Data reverse engineering on a smartphone", *Proc. Int. Conference on Ultra Modern Telecommunications* (ICUMT 09), St. Petersburg, Russia, October 12–14, 2009, 1–8.

[189] P. Spallaccini, F. Iovine, G. F. Italiano."An Automatized Methodology Design For Real-Time Signal Processing Applications in Multiple Multi-Core Platforms". *Proc. IEEE International Conference on Multimedia & Expo* (ICME 2009) New York, NY, June 28 - July 3, 2009, 1829–1832.

[190] A. Grillo, A. Lentini, G. Me, G. F. Italiano, "Transaction oriented text messaging with Trusted-SMS", *Proc 24th Annual Computer Security Applications Conference* (ACSAC), Anaheim (CA), USA, December 8–12, 2008, 485–494.

[191] G. S. Brodal, R. Fagerberg, I. Finocchi, F. Grandoni, G. F. Italiano, A. G. Jørgensen, G. Moruz, T. Mølhave, "Optimal Resilient Dynamic Dictionaries", *Proc. 15th Annual European Symposium on Algorithms* (ESA 07), Eilat, Israel, October 8-10, 2007, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2007, 347–358.

[192] G. Ausiello, C. Demetrescu, P. G. Franciosa, G. F. Italiano, A. Ribichini, "Small Stretch Spanners in the Streaming Model: New Algorithms and Experiments", *Proc. 15th Annual European Symposium on Algorithms* (ESA 07), Eilat, Israel, October 8-10, 2007, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2007, 605–617[13].

[193] F. Dellutri, S. Di Blasi, G. F. Italiano, "Transparent File Protection in On-Demand Computing", *Proc. 2007 Int. Conf. on Grid Computing and Applications* (GCA'07) Las Vegas, NV, USA, June 25–28, 2007, pp. 116–122.

[194] I. Finocchi, F. Grandoni, G. F. Italiano, "Resilient Search Trees". *Proc. 18th ACM-SIAM Symposium on Discrete Algorithms* (SODA 07), New Orleans, LA, January 7-9, 2007, pp. 547–554.

[195] F. Grandoni, G. F. Italiano, "Improved Approximation for Single-Sink Buy-at-Bulk". *Proc. 17th International Symposium on Algorithms and Computation* (ISAAC 2006), Kolkata, India, December 18-20, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 111–120.

[196] F. Grandoni, G. F. Italiano, "Algorithms and Constraint Programming". INVITED LECTURE, *Proc. 12th Int. Conf. on Principles and Practice of Constraint Programming* (CP 2006), France, September 26–29, 2006, *Lecture Notes in Computer Science* vol. 4204, Springer-Verlag, Berlin, 2006, 2–14.

[197] C. Demetrescu, P. Faruolo, G. F. Italiano, M. Thorup, "Does Path Cleaning Help in Dynamic All-Pairs Shortest Paths?", *Proc. 14th Annual European Symposium on Algorithms* (ESA 2006), Zürich, Switzerland, 11-13 September 2006, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2006, 732–743.

[198] U. Ferraro Petrillo, I. Finocchi, G. F. Italiano, "The Price of Resiliency: A Case Study on Sorting with Memory Faults", *Proc. 14th Annual European Symposium on Algorithms* (ESA 2006), Zürich, Switzerland, 11-13 September 2006, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2006, 768–779.[14]

[199] I. Finocchi, F. Grandoni, G. F. Italiano, "Optimal Resilient Sorting and Searching in the presence of Dynamic Memory Faults", *Proc. 33rd International Colloquium on Automata, Languages, and Programming* (ICALP 06), Venice, Italy, 9–16 July 2006, *Lecture Notes in Computer Science* vol. 4051, Springer-Verlag, Berlin, 2006, 286–298.[15]

---

[13]Selected as one of the best papers for the conference special issue in the journal *Algorithmica*.

[14]Selected as one of the best papers for the conference special issue in the journal *Algorithmica*.

[15]Selected as one of the best papers for the conference special issue in the journal *Theoretical Computer Science*.

[200] C. Demetrescu, G. F. Italiano, "Algorithmic Techniques for Maintaining Shortest Routes in Dynamic Networks", INVITED LECTURE, *Proc. 2nd Workshop on Cryptography for Ad Hoc Networks* (WCAN 2006), *Electronic Notes in Theoretical Computer Science*, 171 (1), 3–15, 2007.

[201] S. Armenia, A. Iovanella, G. F. Italiano, G. Murgia, "Using social network analysis for the study of asynchronous interaction in e-learning", *Proc. International Conference on e-Learning* (ICEL 2006), Montreal, Canada, June 22-23 , 2006, 207–216.

[202] V. Bonifaci, C. Demetrescu, I. Finocchi, G. F. Italiano, L. Laura, "Portraying algorithms with Leonardo Web", *Proc. Int. Workshop on Web-based Learning*, November 20-22, 2005, vol. 3807, Springer-Verlag, Berlin, 2005 73–83.

[203] I. Finocchi, F. Grandoni, G. F. Italiano, "Designing reliable algorithms in unrealiable memory". INVITED LECTURE, *Proc. 13th Annual European Symposium on Algorithms* (ESA 2005 - Design and Analysis track), Spain, 3-6 October 2005, 1–8.

[204] G. Ausiello, P. G. Franciosa, G. F. Italiano, "Small stretch spanners on dynamic graphs". *Proc. 13th Annual European Symposium on Algorithms* (ESA 2005 - Design and Analysis track), Spain, 3-6 October 2005, 532–543.

[205] G. Cattaneo, U. Ferraro Petrillo, P. Faruolo, G. F. Italiano, "JIVE: Java Interactive software Visualization Environment ". *Proc. 20th IEEE Symposium on Visual Languages and Human-Centric Computing* (VL/HCC 04), Rome, Italy, September 26-29, 2004, 41–43.

[206] G. Me, P. Spagnoletti, G. F. Italiano, "GSM and GPRS Performance of IPSEC Data Communication". *Proc. International Conference on E-Business and Telecommunications Networks* (ICETE 2004), Setubal, Portugal, August 25–28, 2004, 3-11. **Best Paper Award** in the conference.

[207] F. Grandoni, G. F. Italiano, "Decremental Clique Problem". *Proc. 30th Int. Workshop on Graph-Theoretic Concepts in Computer Science* (WG 04), Bad Honnef, Bonn, Germany, June 21–23, 2004, *Lecture Notes in Computer Science* vol. 3353, Springer-Verlag, Berlin, 2004, 142–153.

[208] N. Apollonio, M. Caramia, G. F. Italiano, "A Stochastic Location Problem with Applications to Telediagnostics". *Proc. 30th Int. Workshop on Graph-Theoretic Concepts in Computer Science* (WG 04), Bad Honnef, Bonn, Germany, June 21–23, 2004, *Lecture Notes in Computer Science* vol. 3353, Springer-Verlag, Berlin, 2004, 201–213.

[209] I. Finocchi, G. F. Italiano, "Sorting and searching in the presence of memory faults (without redundancy)". *Proc. 36th Annual ACM Symposium on Theory of Computing* (STOC 04), Chicago, IL, June 13-15, 2004, 101–110.

[210] C. Demetrescu, G. F. Italiano, "Enginering shortest path algorithms". INVITED LECTURE, *3rd Proc. Workshop on Experimental Algorithms* (WEA 04), May 25–28 2004, Angra dos Reis, Brazil, 191–198.

[211] C. Demetrescu, S. Emiliozzi, G. F. Italiano, "Experimental Analysis of Dynamic All Pairs Shortest Path Algorithms" *Proc. 15th ACM-SIAM Symposium on Discrete Algorithms* (SODA 04), New Orleans, LA, January 11-13, 2004, 362–371[16].

[212] C. Demetrescu, I. Finocchi, G. F. Italiano, "Enginering and visualizing algorithms". INVITED LECTURE, *Proc. 11th Symposium on Graph Drawing* (GD 03), Perugia, Italy, 21–24 September 2003, *Lecture Notes in Computer Science* vol. 2912, Springer-Verlag, Berlin, 2004, 519–513.

[213] F. Grandoni, G. F. Italiano, "Improved Algorithms for Max Restricted Path Consistency", *Proc. 9th Int. Conf. Principles and Practice of Constraint Programming* (CP 2003), Kinsale, Ireland, *Lecture Notes in Computer Science* vol. 2833, Springer-Verlag, Berlin, 2003, 858-862.

[214] C. Demetrescu, G. F. Italiano, "A new approach to dynamic all pairs shortest paths". *Proc. 35th Annual ACM Symposium on Theory of Computing* (STOC 03), San Diego, CA, 9-11 June 2003, 159–166.

[215] P. Crescenzi, R. Grossi, G. F. Italiano, "Search Data Structures for Skewed Strings". *Proc. 2nd Int. Workshop on Experimental and Efficient Algorithms* 26–28 May 2003, Monte Verità, Ascona, Switzerland, 81–96.

---

[16]Selected as one of the best papers for the conference special issue in the journal *ACM Transaction on Algorithms*.

[216] G. F. Italiano, S. Leonardi, G. Oriolo, "Design of networks in the hose model", *Proc. 3rd Workshop on Approximation and Randomization Algorithms in Communication Networks* (ARACNE 02), Rome, September 2002.

[217] C. Demetrescu, G. F. Italiano, "Improved Bounds and New Trade-Offs for Dynamic Shortest Paths". *Proc. 29th International Colloquium on Automata, Languages, and Programming* (ICALP 02), Malaga, Spain, 8–13 July 2002, *Lecture Notes in Computer Science* vol. 2380, Springer-Verlag, Berlin, 2002, 633–643.

[218] G. F. Italiano, R. Rastogi, B. Yener, "Restoration Algorithms for Virtual Private Networks in the Hose Model". *Proc. IEEE INFOCOM 2002*, 21st Annual Joint Conf. of the IEEE Computer and Communications Societies, New York, U.S.A., 23–27 June 2002.

[219] G. Cattaneo, P. Faruolo, U. Ferraro Petrillo, G. F. Italiano, "Maintaining Dynamic Minimum Spanning Trees: An Experimental Study". *Proc. 4th Workshop on Algorithm Engineering and Experiments* (ALENEX 02) January 6–8, 2002, San Francisco, U.S.A. *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2002, 111–125.

[220] C. Demetrescu, G. F. Italiano, "Fully Dynamic All Pairs Shortest Paths with Real Edge Weights". *Proc. 42nd IEEE Annual Symp. on Foundations of Computer Science* (FOCS 2001), Las Vegas, NV, U.S.A., October 14-17, 2001, 260–267.[17]

[221] G. F. Italiano, S. Leonardi, G. Oriolo, "Network design with the HOSE model", *Proc. XXII Conferenza Annuale della Società Italiana di Ricerca Operativa* (AIRO 2001), Cagliari, 4-7 Settembre 2001.

[222] M. Caramia, G. F. Italiano, G. Oriolo, A. Pacifici, A. Perugia, "Routing a Fleet of Vehicles for Combined Pick-up and Delivery Services", *Symposium on Operations Research* 2001, Duisburg, Germany, 3-5 Sept. 2001, pp. 3–8, Springer-Verlag, Berlin, 2001.

[223] C. Demetrescu, G. F. Italiano, "Dynamic Transitive Closure: Breaking Through the $O(n^2)$ Barrier". *Proc. 41st IEEE Annual Symp. on Foundations of Computer Science* (FOCS 2000), Redondo Beach, CA, 12–14 November 2000, 381–389.

[224] M. Caramia, P. Dell'Olmo, G. F. Italiano, "New Algorithms for Examination Timetabling". *Proc. 4th Workshop on Algorithm Engineering* (WAE 2000), September 5–8 2000, Saarbrücken, Germany, *Lecture Notes in Computer Science* vol. 1982, pp. 230–242, Springer-Verlag, Berlin, 2001.

[225] A. Caprara, G. F. Italiano, G. Mohan, A. Panconesi, A. Srinivasan, "Wavelength Rerouting in Optical Networks, or the Venetian Routing Problem", *Proc. 3rd International Workshop on Approximation Algorithms for Combinatorial Optimization Problems* (APPROX 2000), September 5–8, 2000, Saarbrücken, Germany, *Lecture Notes in Computer Science* vol. 1913, pp. 72–83, Springer-Verlag, Berlin, 2000.

[226] C. Demetrescu, G. F. Italiano, "What Do We Learn from Experimental Algorithmics?" INVITED LECTURE, *Proc. 25th International Symposium on Mathematical Foundations of Computer Science* (MFCS 2000), August 28 – September 1, 2000, Bratislava, Slovakia, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2000, pp. 36–51.

[227] Y. Qin, B. Li, G. F. Italiano, "A Low Cost and Effective Heuristic Wavelength Assignment Algorithm in a Wide-Area WDM based All Optical Network", *Proc. 14th International Conference on Information Networking* (ICOIN-14), January 26–28 2000, Hins-Chu, Taiwan, R.O.C.

[228] R. Grossi, G. F. Italiano, "Efficient techniques for maintaining multidimensinal keys in linked data structures". *Proc. 26th International Colloquium on Automata, Languages, and Programming* (ICALP 99), Prague, Czech Republic, July 1999, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 1999, 372–381.

[229] B. Li, M. Golin, G. F. Italiano, X. Deng, K. Sohraby, "On the optimal placement of Web Proxies in the Internet", *Proc. IEEE INFOCOM 99*, 18th Annual Joint Conf. of the IEEE Computer and Communications Societies, New York, U.S.A., 21–25 March 1999, vol.3, 1282–1290.

[230] G. Cattaneo, U. Ferraro Petrillo, G. F. Italiano, V. Scarano, "Cooperative Algorithm and Data Types Animation over the Net", INVITED LECTURE, *Proc. Fundamentals, Foundations of Com-*

---

[17] Selected as one of the best papers for the conference special issue in the *Journal of Computer and System Sciences*.

puter Science, XV IFIP World Computer Congress, Vienna and Budapest, 31 August – 4 September 1998, 63–80.

[231] G. Ausiello, G. F. Italiano, U. Nanni, "Hypergraph Traversal Revisited: Cost Measures and Dynamic Algorithms", *Proc. Mathematical Foundations on Computer Science* (MFCS 98), Brno, Czech Republic, 24–28 August 1998, *Lecture Notes in Computer Science*, vol. 1450, Springer-Verlag, Berlin, 1998, 1–.

[232] F. Pittarello, M. Pittarello, G. F. Italiano, "Architecture and Digital Exhibitions – the Einstein Tower World", *Virtual Environments '98*, *Proc. Eurographics Workshop*, Wien, Austria, June 16-18, 1998, M. Göbel, J. Landauer, U. Lang and M. Wapler (Eds.), Springer-Verlag, 1998, 162–71.

[233] D. Alberts, G. Cattaneo, G. F. Italiano, U. Nanni, C. D. Zaroliagis "A Software Library of Dynamic Graph Algorithms". *Proc. Algorithms and Experiments* (ALEX 98), Trento, Italy, February 9–11, 1998, R. Battiti and A. A. Bertossi (Eds), pp. 129–136.

[234] D. Frigioni, G. F. Italiano, "Switching vertices on and off in planar graphs". *Proc. 5th Annual European Symposium on Algorithms* (ESA 97), Graz, Austria, 15–17 September 1997, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 1997, 186–199.[18]

[235] R. Grossi, G. F. Italiano, "Efficient splitting and merging algorithms for order decomposable problems", *Proc. 24th International Colloquium on Automata, Languages, and Programming* (ICALP 97), Bologna, Italy, 7 - 11 July 1997, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 1997, 605–615.[19]

[236] G. Amato, G. Cattaneo, G. F. Italiano, "Experimental analysis of dynamic minimum spanning tree algorithms", *Proc. 8th ACM-SIAM Annual Symp. on Discrete Algorithms* (SODA 97), New Orleans, USA, 5–7 January 1997, 314–323.

[237] D. Alberts, G. Cattaneo, G. F. Italiano, "An empirical study of dynamic graph algorithms", *Proc. 7th ACM-SIAM Annual Symp. on Discrete Algorithms* (SODA 96), Atlanta, GA, USA, 28–30 January 1996, 192–201.

[238] G. F. Italiano, R. Ramaswami, "Maintaining spanning trees of small diameter", *Proc. 21st International Colloquium on Automata, Languages, and Programming* (ICALP 94), Jerusalem, Israel, 11 - 14 July 1994, *Lecture Notes in Computer Science* vol. 820, Springer-Verlag, Berlin, 1994, 227–238.

[239] G. F. Italiano, J. A. La Poutré, M. H. Rauch, "Fully dynamic planarity testing in planar embedded graphs", *Proc. 1st Annual European Symposium on Algorithms* (ESA 1993), Bad Honnef, Bonn, Germany, 30 September - 2 October 1993, *Lecture Notes in Computer Science* vol. 726, Springer-Verlag, Berlin, 1993, 212–223.[20]

[240] R. Grossi, G. F. Italiano, "Suffix trees and their applications in string algorithms", INVITED LECTURE, *Proc. 1st South American Workshop on String Processing*, (WSP 93), Belo Horizonte, Brazil, 13-15 September 1993, 57–76.

[241] D. Eppstein, Z. Galil, G. F. Italiano, T. H. Spencer, "Separator based sparsification for dynamic planar graph algorithms", *Proc. 25th Annual ACM Symposium on Theory of Computing* (STOC 93), San Diego, CA, 16-18 May 1993, 208–217.[21]

[242] D. Eppstein, Z. Galil, G. F. Italiano, A. Nissenzweig, "Sparsification – A technique for speeding up dynamic graph algorithms", *Proc. 33rd IEEE Annual Symp. on Foundations of Computer Science* (FOCS 92), Pittsburgh, 24-27 October 1992, 60–69.

[243] D. Giammarresi, G. F. Italiano, "Dynamic 2- and 3-connectivity on planar graphs", *Proc. 3rd Scandinavian Workshop on Algorithm Theory* (SWAT 92), Helsinki, Finland, 8-10 July 1992, *Lecture Notes in Computer Science* vol. 621, Springer-Verlag, Berlin, 1992, 221–232.

[244] Z. Galil, G. F. Italiano, N. Sarnak, "Fully dynamic planarity testing", *Proc. 24th Annual ACM Symposium on Theory of Computing* (STOC 92), Victoria, Canada, 4-6 May 1992, 495–506.

---

[18]Selected as one of the best papers for the conference special issue in the journal *Algorithmica*.
[19]Selected as one of the best papers for the conference special issue in the journal *Theoretical Computer Science*.
[20]Selected as one of the best papers for the conference special issue in the journal *Algorithmica*.
[21]Selected as one of the best papers for the conference special issue in the *Journal of Computer and System Science*.

[245] G. F. Italiano, "Distributed algorithms for updating shortest paths", *Proc. 5th International Workshop on Distributed Algorithms* (WDAG 91), Delphi, Greece, 7-9 October 1991, *Lecture Notes in Computer Science* vol. 579, Springer-Verlag, Berlin, 1992, 200–211.

[246] G. F. Italiano, N. Sarnak, "Fully persistent data structures for disjoint set union problems", *Proc. Workshop on Algorithms and Data Structures* (WADS 91), Ottawa, Canada, 14-16 August 1991, *Lecture Notes in Computer Science* vol. 519, Springer-Verlag, Berlin, 1991, 449–460.

[247] Z. Galil, G. F. Italiano, "Maintaining biconnected components of dynamic planar graphs", *Proc. 18th International Colloquium on Automata, Languages, and Programming* (ICALP 91), Madrid, Spain, 8-12 July 1991, *Lecture Notes in Computer Science* vol. 510, Springer-Verlag, Berlin, 1991, 339–350.

[248] Z. Galil, G. F. Italiano, "Fully dynamic algorithms for edge-connectivity problems", *Proc. 23rd Annual ACM Symposium on Theory of Computing* (STOC 91), New Orleans, 6-8 May 1991, 317–327.

[249] M. Chrobak, D. Eppstein, G. F. Italiano, M. Yung, "Efficient sequential and parallel algorithms for computing recovery points in trees and paths", *Proc. 2nd Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA 91), San Francisco, CA, 28-30 January 1991, 158–167.

[250] D. Eppstein, G. F. Italiano, R. Tamassia, R. E. Tarjan, J. Westbrook, M. Yung, "Maintenance of a minimum spanning forest in a dynamic planar graph", *Proc. First Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA 90), San Francisco, CA, 22-24 January 1990, 1–11.[22]

[251] G. Ausiello, G. F. Italiano, A. Marchetti Spaccamela, U. Nanni, "Incremental algorithms for minimal length paths", *Proc. First Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA 90), San Francisco, CA, 22-24 January 1990, 12–21.

[252] D. Eppstein, Z. Galil, R. Giancarlo, G. F. Italiano, "Sparse dynamic programming", *Proc. First Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA 90), San Francisco, CA, 22-24 January 1990, 513–522.

[253] G. F. Italiano, U. Nanni, "Online maintenance of minimal directed hypergraphs", *Proc. 3rd Italian Conference on Theoretical Computer Science* (ICTCS 89), Mantova (Italy), 2-4 November, 1989, World Scientific, 335–349.

[254] G. F. Italiano, A. Marchetti Spaccamela, U. Nanni, "Dynamic data structures for series parallel digraphs", *Proc. Workshop on Algorithms and Data Structures* (WADS 89), Ottawa, Canada, 17-19 August 1989, *Lecture Notes in Computer Science* vol. 382, Springer-Verlag, Berlin, 1989, 352–372.

[255] C. Arbib, G. F. Italiano, A. Panconesi, "Predicting deadlock in store-and-forward networks", *Proc. 8th Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS 88), Pune, India, 21-23 December 1988, *Lecture Notes in Computer Science*, vol. 338, Springer-Verlag, Berlin, 1988, 123–142.

[256] G. Gambosi, G. F. Italiano, M. Talamo, "The set union problem with dynamic weighted backtracking", *Proc. 26th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, 28-30 September 1988, 819–831.

[257] G. Gambosi, G. F. Italiano, M. Talamo, "Getting back to the past in the union-find problem", *Proc. 5th Symposium on Theoretical Aspects of Computer Science* (STACS 88), Bordeaux, France, 11-13 February 1988, *Lecture Notes in Computer Science* vol. 294, Springer-Verlag, Berlin, 1988, 8–17.

[258] G. F. Italiano, "Transitive closure for dynamic graphs", *Proc. 24th Annual Allerton Conference on Communication, Control and Computing*, Monticello, IL, 1-3 October 1986, 29–38.

Other Publications

[259] G. F. Italiano, "Dynamic data structures for graphs", Ph.D. Thesis, Tech. Rep. CUCS-019-91, Department of Computer Science, Columbia University, 1991.

---

[22]Selected as one of the best papers for the conference special issue in the *Journal of Algorithms.*

In Preparation

[260] L. Georgiadis, D. Graf, G. F. Italiano, N. Parotsidis, P. Uznański, "All-Pairs k-Reachability in DAGs". Submitted, 2017.

[261] J. Holm, G. F. Italiano, A. Karczmarz, J. Łącki, E. Rotenberg, "Decremental SPQR-trees for Planar Graphs". Submitted, 2017.

PATENTS

[262] Giuseppe F. Italiano, Rajeev Rastogi, Bülent Yener. "Restoration for Virtual Private Networks". United States Patent no. 8,028,050. Assigned on September 27, 2011.