Curriculum Vitae of Gianpiero Monaco

1. Personal information, studies and positions held

Personal information

Citizenship: Italian
Email: gianpiero.monaco@univaq.it
Web: http://www.gianpieromonaco.com

Studies

2006: Master Degree cum Laude in Computer Science – University of L'Aquila (July 2006).

2010: European PhD in Computer Science – University of L'Aquila (April 2010).

National Scientific Qualification (ASN)

August 2018: Habilitation as Associate Professor (seconda fascia) both in Computer Science ("Informatica", 01/B1), and in Data Processing Systems ("Sistemi di Elaborazione delle Informazioni", 09/H1).

Positions

1 November 2009 – 31 October 2010: Research fellow at INRIA Sophia Antipolis, Project Team MASCOTTE (France).

November 2010 – February 2011: Research fellow at Department of Science, University of Chieti-Pescara.

March 2011 – February 2012: Research fellow at the Department of Computer Science, University of L'Aquila.

March 2012 – April 2012: Research fellow at the Institute of Informatics, University of Warsaw (Poland).

From April 2012 – ongoing (current position): Assistant Professor (tenure track – ricercatore a tempo indeterminato) of Computer Science (sector 01/B1) at the Department of Information Engineering Computer Science and Mathematics – University of L'Aquila.

Academic roles

From 2018 – ongoing: Coordinator of the international double degree Master in Computer Science UBIDIS (UBIquitus computing and DIstributed Systems), University of L'Aquila and University of Côte d'Azur (France).

From 2013 – ongoing: Member of the Doctoral Program Committee in Information and Communication Technology ICT – University of L'Aquila.

2014-2015: Member of the VQR Committee of the Department of Information Engineering Computer Science and Mathematics – University of L'Aquila.

From 2018 – ongoing: Member of the Research Committee of the Department of Information Engineering Computer Science and Mathematics – University of L'Aquila.

From 2018 – ongoing: Member of the Didactic Committee of Computer Science Bachelor and Master Degrees – University of L'Aquila.

He has been member of several committees for doctoral, post-doctoral and post-graduate grants. Moreover, he has taken part to the organizing committee of SHARPER (notte dei ricercatori) and he is the coordinator of the Career Day 2019 of Computer Science Bachelor and Master Degrees.

Visits

November – December 2007 and May – August 2008: Visitor at the Department of Computer Engineering & Informatics – University of Patras (Greece) hosted by Prof. Christos Kaklamanis and Prof. Ioannis Caragiannis.

May 2011: Visitor at the Department of Computer Science of Technion – Haifa (Israel), hosted by Prof. Shmuel Zaks.

November 2011 – January 2012: Visitor at the Division of Mathematical Sciences – Nanyang Technological University (Singapore) hosted by Prof. Edith Elkind.

March 2012 – October 2012, February 2014 – March 2014, October 2014 – November 2014: Visitor at the Institute of Informatics – University of Warsaw (Poland) hosted by Prof. Piotr Sankowski.

September 2013: Visitor at INRIA Sophia Antipolis (France) hosted by Dr. David Coudert.

October 2019: Visitor at the Department of Computer Science – University of Oxford (United Kingdom) hosted by Prof. Edith Elkind.

He did many seminars during visiting research periods at national and international research centers and Universities.

2. Research activity

The research activity focused on issues related to the theoretical analysis and design of efficient algorithms, computational complexity, approximate and online algorithms, algorithmic game theory, economics

and computation. It has been performed also in collaboration with reputed scientists in the corresponding fields and with several prestigious national and international research centers, with which he currently maintains active collaborations.

Collaborations
Active international collaborations in which he is directly involved, are:
Prof. Edith Elkind and Dr. Dominik Peters – University of Oxford (United Kingdom), Prof. Piotr Sankowski – University of Warsaw (Poland), Prof. Ioannis Caragiannis – University of Patras (Greece), Prof. Shmuel Zaks – Technion (Israel), Dr. Mordechai Shalom – Tel Hai College (Israel), Dr. David Coudert – INRIA (France), Dr. Stephanne Perennes – CNRS (France), Dr. Angelo Fanelli – CNRS (France), Dr. Ayumi Igarashi – University of Tokio (Japan).

Active national collaborations (excluding researchers from University of L'Aquila) in which he is directly involved, are:
Prof. Alberto Marchetti Spaccamela and Prof. Stefano Leonardi – University of Rome "La Sapienza", Prof. Vittorio Bilò – University of Salento, Prof. Luca Moscardelli – University of Chieti-Pescara, Dr. Gianlorenzo D'angelo, Dr. Cosimo Vinci and Dr. Bojana Kodric – GSSI, Dr. Luciano Gualà – University of Rome "Tor Vergata", Dr. Yllka Velaj – ISI Foundation.

PhD supervising
Supervision of 2 PhD students: Raffaello Carosi and Francesco Cellinese at the GSSI institute of L'Aquila. They have defended their Phd thesis on July 2019.

Personal funds
– 33000E funding by Gunpowder S.r.L., for applied research and research grants focusing on innovative solutions in cloud computing, big data, data analysis and internet of things.
– He has been awarded with the annual funding for basic research (FFABR) from the Italian ministry for research.

Projects
November 2006 – October 2008: Participant to the international project COST 293: "Graphs and algorithms in communication networks".

April 2010 – March 2011: Participant to the national project PRIN: "Aspetti algoritmici e strategici in reti di comunicazione non coordinate".

March 2012 – December 2014: Participant to the international ERC project: "PAAL Practical Approximation Algorithms", lead by Prof. Piotr Sankowski.
February 2013 – February 2016: Participant to the national project PRIN: "ARS TechnoMedia Algoritmica per le Reti Sociali Tecno-mediate".

Services

- Program committes member of:

  * The Nineteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2020).
  * The 24th European Conference on Artificial Intelligence, (ECAI 2020).
  * The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020).
  * The 28th International Joint Conference on Artificial Intelligence (IJCAI 2019).
  * The 2019 International Conference on High Performance Computing & Simulation (HPCS 2019).
  * The 19th ACM conference on Economics and Computation (EC 2018).
  * The 16th Workshop on Approximation and Online Algorithms (WAOA 2018).
  * The 10th International Symposium on Algorithmic Game Theory (SAGT 2017).
  * The 30th IEEE International Parallel & Distributed Processing Symposium (IPDPS 2016).
  * The 25th International Joint Conference on Artificial Intelligence (IJCAI 2016).

- Organizing committee member of the 10th International Symposium on Algorithmic Game Theory (SAGT 2017).
- Organizing committee member of the international Phd school: GII Doctoral School – Boosting Services and Information in Adaptive Networked Enterprise, L'Aquila, September 2008.
- He regularly performs review activity for the most prestigious international journals and conferences.

Presentation at international conferences

- Local Core Stability in Simple Symmetric Fractional Hedonic Games. The 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019), May 15-17, 2019, Montreal, Canada.

- On the Performance of Stable Outcomes in Modified Fractional Hedonic Games with Egalitarian Social Welfare. The 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019), May 15-17, 2019, Montreal, Canada.

- Pricing Problems with Buyer Preselection. The 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018), August 27-31, 2018, Liverpool, United Kingdom.

- Strategyproof Mechanisms for Additively Separable Hedonic Games and Fractional Hedonic Games. The 15th Workshop on Approximation and Online Algorithms (WAOA 2017), September 7-8, 2017. Vienna, Austria.

- Nash Stability in Fractional Hedonic Games. The 10th Conference on Web and Internet Economics (WINE 2014), December 14-17, 2014, Beijing, China.

– Approximating the Revenue Maximization Problem with Sharp Demands. 14th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT 2014), July 2–4, 2014, Copenhagen, Denmark.

– Optimizing Regenerator Cost in Traffic Grooming. The 14th International Conference On Principles Of Distributed Systems (OPODIS 2010), December 13–17, 2010, Tozeur, Tunisia.

– On the Complexity of the Regenerator Placement Problem in Optical Networks. The 21st ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2009), August 11–13, 2009, Calgary, Canada.

– A 6/5–approximation algorithm for the maximum 3–cover problem. The 33rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2008), August 25–29, 2008, Torun, Poland.

3. Teaching activity (Bachelor and Master degrees)

Courses held at the Department of Information Engineering Computer Science and Mathematics – University of L'Aquila:

– a.y. 2012–2013 and from a.y. 2014–2015 to a.y. 2019–2020: "Information Systems and Network Security". (Master in Computer Science, 6 CFU course). Course taught in English.
– a.y. 2013–2014: "Algoritmi e Strutture Dati 2". (Master in Computer Science, 6 CFU course). Course taught in Italian.
– a.y. 2013–2014: "Architettura degli Elaboratori". (Bachelor in Computer Science, 6 CFU course). Course taught in Italian.
– From a.y. 2016–2017 to a.y. 2019–2020: "Social Networks". (Master in Computer Science, 3 CFU course). Course taught in English.

He has supervised several bachelor and master degree thesis at the University of L'Aquila.

4. List of publications

International Journals

[J17] G. Monaco, L. Moscardelli, Y. Velaj: Stable Outcomes in Modified Fractional Hedonic Games. Autonomous Agents and Multi–Agent Systems. 2019. To appear.

[J16] R. Carosi, G. Monaco: Generalized Graph k–Coloring Games. Theory of Computing Systems. 2019. To appear.

[J15] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: Nash Stable Outcomes in Fractional Hedonic Games: Existence, Efficiency and Computation. Journal of Artificial Intelligence Research. 62:315–371, 2018.

[J14] M. Flammini, V. Gallotti, G. Melideo, G. Monaco, L. Moscardelli: Network Movement Games. Theoretical Computer Science, 667:101–118, 2017.

[J13] V. Bilò, M. Flammini, G. Monaco: Approximating the Revenue Maximization Problem with Sharp Demands. Theoretical Computer Science, 662:9–30, 2017.

[J12] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: The Price of Envy-Freeness in Machine Scheduling. Theoretical Computer Science, 613:65–78, 2016.

[J11] A. Fanelli, D. Leniowski, G. Monaco, P. Sankowski: The ring design game with fair cost allocation. Theoretical Computer Science, 562:90–100, 2015.

[J10] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: Some Anomalies of Farsighted Strategic Behavior. Theory of Computing Systems, 56(1):156–180, 2015.

[J9] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: On the Complexity of the Regenerator Cost Problem in General Networks with Traffic Grooming. Algorithmica, 68(3):671–691, 2014.

[J8] I. Caragiannis, G. Monaco: A 6/5-approximation algorithm for the maximum 3-cover problem. Journal of Combinatorial Optimization, 25(1):60–77, 2013.

[J7] V. Bilò, I. Caragiannis, A. Fanelli, G. Monaco: Improved lower bounds on the price of stability of undirected network design games. Theory of Computing System, 52(4):668–686, 2013.

[J6] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Optimizing Regenerator Cost in Traffic Grooming. Theoretical Computer Science, 412(52):7109–7121, 2011.

[J5] M. Flammini, A. Marchetti Spaccamela, G. Monaco, L. Moscardelli, S. Zaks: On the Complexity of the Regenerator Placement Problem in Optical Networks. IEEE/ACM Transactions on Networking, 19(2):498–511, 2011.

[J4] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: On the performances of Nash Equilibria in Isolation Games. Journal of Combinatorial Optimization, 22(3):378–391, 2011.

[J3] M. Flammini, G. Monaco, L. Moscardelli, H. Shachnai, M. Shalom, T. Tamir, S. Zaks: Minimizing total busy time in parallel scheduling with application to optical networks, Theoretical Computer Science, 411(40–42):3553–3562, 2010.

[J2] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Selfishness, Collusion and Power of Local Search for the ADMs Minimization Problem. Computer Networks, 52(9):1721-1731, 2008.

[J1] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Approximating the traffic grooming problem in tree and star networks. Journal of Parallel and Distributed Computing, 68(7):939-948, 2008.

Internazional Conferences

[I37] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: Optimality and Nash Stability in Additive Separable Generalized Group Activity Selection Problems. In Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019).

[I36] R. Carosi, G. Monaco, L. Moscardelli: Local Core Stability in Simple Symmetric Fractional Hedonic Games. In Proceedings of the 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019).

[I35] G. Monaco, L. Moscardelli, Y. Velaj: On the Performance of Stable Outcomes in Modified Fractional Hedonic Games with Egalitarian Social Welfare. In Proceedings of the 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019).

[I34] V. Bilò, I. Caragiannis, M. Flammini, A. Igarashi, G. Monaco, D. Peters, C. Vinci, W.S. Zwicker: Almost Envy-Free Allocations with Connected Bundles. In Proceedings of the 10th Innovations in Theoretical Computer Science (ITCS 2019).

[I33] R. Carosi, S. Fioravanti, L. Gualà, G. Monaco: Coalition Resilient Outcomes in Max k-Cut Games. In Proceedings of the 45th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2019).

[I32] F. Cellinese, G. D'Angelo, G. Monaco, Y. Velaj: Generalized budgeted submodular set function maximization. In Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018).

[I31] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: Pricing Problems with Buyer Preselection. In Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018).

[I30] G. Monaco, L. Moscardelli, Y. Velaj: Hedonic Games with Social Context. In Proceedings of 19th Italian Conference on Theoretical Computer Science (ICTCS 2018).

[I29] R. Carosi, G. Monaco: Generalized Graph k-Coloring Games. In Proceedings of the 24th International Computing and Combinatorics Conference (COCOON 2018).

[I28] V. Bilò, F. Cellinese, G. Melideo, G. Monaco: On Colorful Bin Packing Games. In Proceedings of the 24th International Computing and Combinatorics Conference (COCOON 2018).

[I27] G. Monaco, L. Moscardelli, Y. Velaj: Stable Outcomes in Modified Fractional Hedonic Games. In Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018).

[I26] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Online Coalition Structure Generation in Graph Games. In Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018).

[I25] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: On the Impact of Buyers Preselection in Pricing Problems (Extended Abstract). In Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018).

[I24] M. Flammini, G. Monaco, Q. Zhang: Strategyproof Mechanisms for Additively Separable Hedonic Games and Fractional Hedonic Games. In Proceedings of the 15th Workshop on Approximation and Online Algorithms (WAOA 2017).

[I23] V. Bilò, I. Caragiannis, A. Fanelli, M. Flammini, G. Monaco: Simple greedy algorithms for fundamental multidimensional graph problems. In Proceedings of the 44th International Colloquium on Automata, Languages, and Programming (ICALP 2017).

[I22] S. Leonardi, G. Monaco, P. Sankowski, Q. Zhang: Budget Feasible Mechanisms on Matroids. In Proceedings of the 19th Conference on Integer Programming and Combinatorial Optimization (IPCO 2017).

[I21] R. Carosi, M. Flammini, G. Monaco: Computing Approximate Pure Nash Equilibria in Digraph k-Coloring Games. In Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2017).

[I20] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: Computing Approximate Nash Equilibria in Network Congestion Games with Polynomially Decreasing Cost Functions. In Proceedings of the 11th Conference on Web and Internet Economics (WINE 2015).

[I19] G. Monaco, P. Sankowski, Q. Zhang: Revenue Maximization Envy-free Pricing for Homogeneous Resources. In Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI 2015).

[I18] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: On the Price of Stability of Fractional Hedonic Games. In Proceedings of the 14th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2015).

[I17] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: Nash Stability in Fractional Hedonic Games. In Proceedings of the 10th Conference on Web and Internet Economics (WINE 2014).

[I16] V. Bilò, A. Fanelli, M. Flammini, G. Monaco, L. Moscardelli: The Price of Envy-Freeness in Machine Scheduling. In Proceedings of the 39th International Symposium on Mathematical Foundations of Computer Science (MFCS 2014).

[I15] V. Bilò, M. Flammini, G. Monaco: Approximating the Revenue Maximization Problem with Sharp Demands. In Proceedings of the 14th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT 2014).

[I14] A. Fanelli, D. Leniowski, G. Monaco, P. Sankowski: The ring design game with fair cost allocation. In Proceedings of the 8th International Workshop On Internet And Network Economics (WINE 2012).

[I13] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: Some Anomalies of Farsighted Strategic Behavior. In Proceedings of the 10th Workshop on Approximation and Online Algorithms (WAOA 2012).

[I12] M. Flammini, V. Gallotti, G. Melideo, G. Monaco, L. Moscardelli: Mobile Network Creation Games. In Proceedings of the 19th International Colloquium on Structural Information and Communication Complexity (SIROCCO 2012).

[I11] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: On the Complexity of the Regenerator Cost Problem in General Networks with Traffic Grooming. In Proceedings of the 15th International Conference On Principles Of Distributed Systems (OPODIS 2011).

[I10] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Optimizing Regenerator Cost in Traffic Grooming. In Proceedings of the 14th International Conference On Principles Of Distributed Systems (OPODIS 2010).

[I9] V. Bilò, I. Caragiannis, A. Fanelli, G. Monaco: Improved lower bounds on the price of stability of undirected network design games. In Proceedings of the 3rd International Symposium on Algorithmic Game Theory (SAGT 10).

[I8] M. Flammini, A. Marchetti Spaccamela, G. Monaco, L. Moscardelli, S. Zaks: On the Complexity of the Regenerator Placement Problem in Optical Networks. In Proceedings of the 21st ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2009).

[I7] V. Bilò, M. Flammini, G. Monaco, L. Moscardelli: On the performances of Nash Equilibria in Isolation Games. In Proceedings of the 15th International Computing and Combinatorics Conference (COCOON 2009).

[I6] M. Flammini, G. Monaco, L. Moscardelli, H. Shachnai, M. Shalom, T. Tamir, S. Zaks: Minimizing Total Busy Time in Parallel Scheduling with Application to Optical Networks. In Proceedings of the 23rd IEEE International Parallel and Distributed Processing Symposium (IPDPS 2009).

[I5] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Approximating the Traffic Grooming Problem with Respect to ADMs and OADMs. In Proceedings of the 14th International Conference on Parallel and Distributed Computing (EuroPar 2008).

[I4] I. Caragiannis, G. Monaco: A 6/5-approximation algorithm for the maximum 3-cover problem. In Proceedings of the 33rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2008).

[I3] S. Di Giannantonio, M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Selfishness, Collusion and Power of Local Search for the ADMs Minimization Problem. In Proceedings of the 3rd International Workshop On Internet And Network Economics (WINE 2007).

[I2] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Minimizing the number of ADMs with and without traffic grooming: complexity and approximability. In Proceedings of the 8th International Conference on Transparent Optical Networks (ICTON 2006).

[I1] M. Flammini, G. Monaco, L. Moscardelli, M. Shalom, S. Zaks: Approximating the Traffic Grooming Problem in Tree and Star Networks. In Proceedings of the 32st International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2006).

Book Chapters

[B2] T. Cinkler, D. Coudert, M. Flammini, G. Monaco, L. Moscardelli, X. Muñoz, I. Sau Valls, M. Shalom, S. Zaks: Traffic Grooming: Combinatorial Results and Practical Resolutions. Chapter in Graphs and Algorithms in Communication Networks, Springer-Verlag, 2010.

[B1] V. Bilò, I. Caragiannis, A. Fanelli, M. Flammini, C. Kaklamanis, G. Monaco, L. Moscardelli: Game-Theoretic Approaches to Optimization Problems in Communication Networks. Chapter in Graphs and Algorithms in Communication Networks, Springer-Verlag, 2010.