

# CURRICULUM VITAE ET STUDIORUM

CARMINE VENTRE

## PERSONAL DATA

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## EDUCATION

Oct. 1997 – Feb. 2003    Laurea degree (MSc equivalent) in Computer Science at Università degli Studi di Salerno. Grade: 110/110 *summa cum laude*. Advisor: Prof. Giuseppe Persiano. Thesis title: “Oblivious Transfer for the distributed generation of RSA keys: Protocols and implementation in OpenSSL.” Average grade: 29.9/30.

Nov. 2003 – Apr. 2007    PhD in Computer Science at Università degli Studi di Salerno. Advisor: Prof. Giuseppe Persiano. Thesis title: “Algorithms for Incentive-Based Computing.”

## WORKING EXPERIENCES

Mar. 2003 – Dec. 2003    Research fellow at Dipartimento di Informatica ed Applicazioni “R.M. Capocelli,” of the Università degli Studi di Salerno hosted by Prof. Giuseppe Persiano. Funded by EU through CRESCCO project.

Mar. 2006    Visiting Student in DCG Group directed by Prof. Roger Wattenhofer in ETH Zurich. Funded by European program COST 295 – DYNAMO.

Sep. 2006 – Oct. 2007    Assegnista di Ricerca (research fellow) at Università degli Studi di Salerno hosted by Prof. Giuseppe Persiano. Supported by the European Project FP6-15964, Algorithmic Principles for Building Efficient Overlay Computers (AEOLUS).

Oct. 2007 – Nov. 2007    Research fellowsh at Dipartimento di Informatica ed Applicazioni “R.M. Capocelli,” of the Università degli Studi di Salerno hosted by Prof. Giuseppe Persiano. Funded by European Project IST-2002-507932 Ecrypt Network of Excellence in Cryptography.

- Dec. 2007 – Mar. 2009 Research Associate at Computer Science Department of the University of Liverpool hosted by Dr. Piotr Krysta. Position funded by DFG project “Algorithmic Tools for Games with Applications to E-Commerce and Networks” within Emmy Noether Program.
- Mar. 2009 – Sep. 2009 Research Associate at Computer Science Department of the University of Liverpool hosted by Dr. Piotr Krysta. Position funded by EPSRC grant “Algorithmic Mechanism Design and Optimization Problems with Economic Applications.”
- Oct. 2009 – Sep. 2012 Research Associate at Computer Science Department of the University of Liverpool hosted by Prof. Paul W. Goldberg. Position funded by EPSRC grant “Efficient Decentralised Approaches in Algorithmic Game Theory.”

#### TEACHING EXPERIENCES AND QUALIFICATIONS

- Spring Semester 2005 Teaching Assistant for Java Programming classes at Dipartimento di Informatica ed Applicazioni “R.M. Capocelli” of the Università degli studi di Salerno.
- Fall Semester 2007 Co-teacher (with Prof. Vincenzo Auletta) for an Algorithmic Game Theory course Dipartimento di Informatica ed Applicazioni “R.M. Capocelli” of the Università degli studi di Salerno.
- October 2008 Demonstrator Workshop training. University of Liverpool. UK.
- Fall 2008 – 2009 Demonstrator (a.k.a. Teaching Assistant) for COMP323 (Algorithmic Game Theory course) at Computer Science Department of the University of Liverpool.
- Oct. 2010 – Apr. 2011 Teaching for Researchers Program finalized to HE Academy associate-ship. University of Liverpool. (HEA accreditation number: 45160.)
- Fall 2010 – 2011 Co-teacher (with Dr. Martin Gairing) for COMP211 (Internet Principles module) at Computer Science Department of the University of Liverpool.

#### LANGUAGES

Italian (mother tongue), English (speaking/reading/writing, fluent), French (speaking/reading/writing, basic knowledge).

#### RESEARCH INTERESTS

- Algorithmic Game Theory, Micro Economics and the Internet
- Algorithms and Complexity
- Cryptography and Security
- Algorithms for Wireless Networks

## PUBLICATIONS

### *International Journals*

1. P. Penna and C. Ventre. *Collusion-Resistant Mechanisms with Verification Yielding Optimal Solutions*. (Full version of [13].) Accepted for publication (under minor revision) in Transactions on Computation Theory.
2. P. Briest, M. Hoefer, L. Gualà and C. Ventre. *On Stackelberg Pricing with Computationally Bounded Consumers*. (Full version of [9].) Accepted for publication in Networks.
3. V. Auletta, P. Penna, G. Persiano and C. Ventre. *Alternatives to Truthfulness are Hard to Recognize*. (Extended version of [14]). Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS). Volume 22, Issue 1 (2011), pp. 200–216.
4. A. Ferrante, G. Parlato, F. Sorrentino and C. Ventre. *Fast Payment Schemes for Truthful Mechanisms with Verification*. (Full version of [19].) Theoretical Computer Science 410 (2009), pp. 886-899.

### *Conferences with Review Process*

5. P. W. Goldberg, R. Savani, T. Sørensen and C. Ventre. *On the approximation performance of Fictitious play in finite games*. In the proceedings of the 19th Annual European Symposium on Algorithms (**ESA 2011**). LNCS 6942, pp. 93–105.
6. P. Krysta and C. Ventre. *Combinatorial Auctions with Verification are Tractable*. In the proceedings of the 18th Annual European Symposium on Algorithms (**ESA 2010**). LNCS 6347, pp. 39-50.
7. L. A. Goldberg, P. W. Goldberg, P. Krysta and C. Ventre. *Ranking Games that have Competitiveness-based Strategies*. In the Proc. of the 11th ACM Conference on Electronic Commerce (**ACM EC 2010**). ACM, pp. 335–344, 2010.
8. F. Grandoni, P. Krysta, S. Leonardi and C. Ventre. *Utilitarian Mechanism Design for Multi-Objective Optimization*. In the Proc. of ACM-SIAM Symposium on Discrete Algorithms (**SODA10**). ACM, pp. 573–584, 2010.
9. P. Briest, M. Hoefer, L. Gualà and C. Ventre. *On Stackelberg Pricing with Computationally Bounded Consumers*. In the Proc. of the 5th international Workshop on Internet & Network Economics (**WINE09**). Springer-Verlag, LNCS series, 5929, pp. 42–54, 2009.
10. D. Ferraioli and C. Ventre. *On the Price of Anarchy of Restricted Job Scheduling Games*. In the Proc. of the 11th Italian Conference on Theoretical Computer Science (**ICTCS 09**), pp. 113–116, 2009.
11. P. Penna and C. Ventre. *Optimal-Collusion Resistant Mechanisms with Verification*. In the Proc. of the 10th ACM Conference on Electronic Commerce (**ACM EC 2009**). ACM, pp. 147–156, 2009.
12. C. Ventre and I. Visconti. *Co-Sound Zero-Knowledge with Public Keys*. In the Proc. of the Second African International Conference on Cryptology (**AfricaCrypt 2009**). Springer-Verlag, LNCS series, 5580, pp. 286-303, 2009.

13. P. Penna and C. Ventre. *Collusion-Resistant Mechanisms with Verification Yielding Optimal Solutions*. In the proceedings of the 16th Annual European Symposium on Algorithms (**ESA 2008**). LNCS 5193, pp. 708-719, 2008.
14. V. Auletta, P. Penna, G. Persiano and C. Ventre. *Alternatives to Truthfulness are Hard to Recognize*. In the Proceedings of 1st Symposium on Algorithmic Game Theory (**SAGT 2008**). LNCS 4997, pp. 194-205, 2008.
15. C. Ventre and I. Visconti. *Completely Non-Malleable Encryption Revisited*. In the Proc. of the 11th International Workshop on Practice and Theory in Public Key Cryptography (**PKC 2008**), 2008. LNCS 4939, pp. 6584, 2008.
16. C. Ventre. *Mechanisms with Verification for Any Finite Domain*. In the Proc. of the 2nd International Workshop on Internet & Network Economics (**WINE 2006**), 2006. LNCS 4286, pp. 37-49, 2006.
17. V. Auletta, R. De Prisco, P. Penna, G. Persiano and C. Ventre. *New Constructions of Mechanisms with Verification*. In the Proc. of the 33rd International Colloquium on Automata, Languages and Programming (**ICALP 2006**). LNCS 4051, pp. 596-607, 2006.
18. P. Penna and C. Ventre. *The Algorithmic Structure of Group Strategyproof Budget-Balanced Cost-Sharing Mechanisms*. In the Proc. of the 23rd International Symposium on Theoretical Aspects of Computer Science (**STACS 2006**). LNCS 3884, pp. 337-348, 2006.
19. A. Ferrante, G. Parlato, F. Sorrentino and C. Ventre. *Improvements for Truthful Mechanisms with Verifiable One-Parameter Selfish Agents*. In Proc. of the 3rd Workshop on Approximation and Online Algorithms (**WAOA 2005**). LNCS 3879, pp. 147-160, 2006.
20. P. Penna and C. Ventre. *Free-riders in Steiner tree cost-sharing games*. In the Proc. of the 12th Colloquium on Structural Information and Communication (**SIROCCO 2005**). LNCS 3499, pp. 231-245, 2005.
21. P. Penna and C. Ventre. *More Powerful and Simpler Cost-Sharing Methods (when cross monotonicity is the wrong way)*. In the Proc. of the 2nd Workshop on Approximation and Online Algorithms (**WAOA 2004**), LNCS 3351, pp. 97-110, 2005.
22. P. Penna and C. Ventre. *Energy-efficient broadcasting in ad-hoc networks: combining MSTs with shortest-path trees*. In the Proc. of the ACM Workshop on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (**PE-WASUN 2004**), ACM, pp. 61-68, 2004.
23. P. Penna and C. Ventre. *Sharing the cost of multicast transmissions in wireless networks*. In Proc. of the 11th Colloquium on Structural Information and Communication (**SIROCCO 2004**), LNCS 3104, pp. 255-266, 2004.

*PhD Thesis*

24. C. Ventre. *Algorithms for Incentive-Based Computing*.

*Others*

25. P. Ambrosio and C. Ventre. *Congestion and Crowding Games*. Survey within the GI-Seminar "Game theoretic analyses of the Internet," 2004.

26. C. Ventre. *Truthful Optimization using Mechanisms with Verification*. (Full version of [16].) Submitted for journal publication.
27. P. Penna and C. Ventre. *Optimal-Collusion Resistant Mechanisms with Verification*. (Full version of [11].) Submitted for journal publication.
28. C. Ventre and I. Visconti. *Co-Sound Zero-Knowledge with Public Keys*. (Full version of [12].) Submitted for journal publication.
29. P. W. Goldberg and C. Ventre. *Using Lotteries to Approximate the Optimal Revenue*. Available as e-print 1110.1980 on arXiv repository.
30. P. W. Goldberg, R. Savani, T. Sørensen and C. Ventre. *On the approximation performance of Fictitious play in finite games*. (Full version of [5].) Submitted for journal publication.
31. L. A. Goldberg, P. W. Goldberg, P. Krysta and C. Ventre. *Ranking Games that have Competitiveness-based Strategies*. (Full version of [7].) Submitted for journal publication.

#### SCIENTIFIC TALKS

- “Sharing the cost of multicast transmission in wireless networks” at the 2nd CRESCCO Workshop. Athens (Greece). December 6, 2003.
- “Sharing the cost of multicast transmission in wireless networks” at SIROCCO 2004. Smonelice Castle (Slovak Republic). June 22, 2004.
- “An Introduction to Congestion and Crowding Games” at GI-Seminar “Game theoretic analyses of the Internet.” Dagstuhl Schoss (Germany). September 1, 2004.
- “More Powerful and Simpler Cost-Sharing Methods” at ALGO 2004. Bergen (Norway). September 15, 2004.
- “Energy-efficient broadcasting in ad-hoc networks: combining MSTs with shortest-path trees” at PE-WASUN 2004. Venice. October 7, 2004.
- “Improvements for Truthful Mechanisms with Verifiable One-Parameter Selfish Agents” at ALGO 2005. Palma de Mallorca (Spain). October 7, 2005.
- “The Algorithmic Structure of Group Strategyproof Budget-Balanced Cost-Sharing Mechanisms” at STACS 2006. Marseille (France). February 24, 2006. Same talk has been given as welcome talk at Distributed Computing Group (DCG) in ETH, Zurich. March 7, 2006.
- “New Definitions and Results for Plaintext Aware and Completely Non-Malleable Encryption Schemes” at ECRYPT Autumn International School on Zero Knowledge: Foundations and Applications. Bertinoro (Italy). November 1, 2006.
- “Algorithms for Selfish Agents” at Computer Science Division of Physics Department of Università “Federico II,” Napoli. Invited and hosted by Clemente Galdi. November 27, 2006.
- “Mechanisms with Verification for Any Finite Domain” at WINE 2006. Patras (Greece). December 15, 2006.
- “(Optimal) Collusion-Resistant Mechanisms with Verification” at DYNAMO 2007. Salerno. May 7, 2007.
- “Mechanisms with Verification” at Computer Science Department, University of Liverpool. Liverpool. January 31, 2008.
- “Alternatives to Truthfulness are Hard to Recognize” at SAGT 2008, Paderborn. May 1, 2008. Talk given also at COMSOC 2008, Liverpool. September 5, 2008.

- “Collusion-Resistant Mechanisms with Verification Yielding Optimal Solutions” at ESA 2008, Karlsruhe. September 17, 2008. Talk given also at Computer Science Department, University of Liverpool. Liverpool. October 16, 2008.
- “Optimal Collusion-Resistant Mechanisms with Verification” at ACM EC 2009. Stanford. July 9, 2009.
- “Utilitarian Mechanism Design for Multi-Objective Optimization” at SODA 2010. Austin, Texas. January 18, 2010. Extended talks have been given at LIAFA and LIP6 research labs in Paris (March 2011).
- “Ranking Games that have Competitiveness-based Strategies” at ACM EC 2010. Cambridge (MA, USA). June 11, 2010. Same talk has been given at BCTCS 2010 (Edinburgh; April 9, 2010) and SCEG 2010 (Aarhus; June 23, 2010).
- “On the approximation performance of Fictitious play in finite games” at ESA 2011. Saarbrücken (Germany). September 6, 2011.

#### PROFESSIONAL SERVICE

- **Program Committee member** of the 13th ACM Conference on Electronic Commerce (EC), 2012.
- **Program Committee member** of the 9th Workshop on Approximation and Online Algorithms (WAOA), 2011.
- **Program Committee member** of the 2nd International Symposium on Algorithmic Game Theory (SAGT), 2009.
- **Program Committee member** of the Special Track on Game Theoretic Aspects of E-Commerce of the conference SOFSEM 2009.
- Reviews for the following journals: *Theoretical Computer Science*; *Theory of Computing Systems*; *Algorithmica*; *IEEE Transactions on Computers*; *SIAM Journal on Computing*; *IEEE Transactions on Knowledge and Data Engineering*; *Journal of AI Research*; *European Journal of Operational Research*; *IEEE Transactions on Systems, Man, and Cybernetics*; *Transactions on Economics and Computation*, *Discrete Applied Mathematics*.
- Reviews for the following conferences: *IPDPS 2004*, *STACS 2005*, *P2P2005*, *WAOA 2005*, *IPDPS 2006*, *AdHoc-NOW 2006*, *ESA 2006*, *WAOA 2006*, *EuroCrypt 2007*, *INSCRYPT 2007*, *WAOA 2007*, *SAGT 2008*, *ICALP 2008*, *SIROCCO 2008*, *WAOA 2008*, *SIROCCO 2009*, *MFCS 2009*, *SAGT 2009*, *WAOA 2009*, *AsiaCrypt 2009*, *WINE2009*, *PKC 2010*, *ICALP 2010*, *STACS 2011*, *ICALP 2011*, *WAOA 2011*.
- Review of a grant proposal for the Wiener Wissenschafts- Forschungs- und Technologiefonds (WWTF) for the “WWTF Information and Communication Technology Call 2010”.

#### ATTENDED SCHOOLS

- 1st Bertinoro Workshop on Algorithmic GAME ThEory (AGATE). Bertinoro (Italy). July 2004.
- BISS 2005: Bertinoro International Spring School for Graduate Studies in Computer Science. Bertinoro (Italy). March 2005. – SMI Summer School “PCP Theorem” held by Prof. Madhu Sudan, Prof. Luca Trevisan and Prof. Alessandro Panconesi. Cortona (Italy). July 2005.
- BICI-INDAM 2005 “International PhD School on Mathematical Aspects of Modern Cryptography.” Bertinoro (Italy). September 2005.
- “Combstru School on Computational Complexity.” Bertinoro (Italy). May 2006.

- “Summer School on Game Theory in Computer Science.” Aarhus (Denmark). June 2006.
- ECRYPT Autumn International School on Zero Knowledge: Foundations and Applications. Bertinoro (Italy). October 28 - November 3, 2006.
- AEOLUS School on Algorithmic Game Theory. Patras (Greece). December 2006.
- Developing Apps for the iPhone and iPad with xCode. Liverpool. June 2011.

#### ORGANIZING COMMITTEES

- *1st Workshop on Dynamic Networks (DYNAMO 2007)*. Università di Salerno. May 7-8, 2007.
- *AEOLUS School on Security of Global Computers: Challenges and Approaches*. Salerno. September 18 - 20, 2007.

#### HONORS

- **Best Master Student Award** from Science faculty of Università degli Studi di Salerno within the 30th anniversary of its foundation.
- **Grants awarded for merits** by EDISU (Regional Association for Study Rights) for the years of the university carrier.

#### REFERENCES

References available upon request.

December 17, 2011

Carmine Ventre