

# Damiano Carra

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## EMPLOYMENT HISTORY

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Nov. 2008 – present	Assistant Professor at the Department of Computer Science, University of Verona, Italy
Feb. 2012 – July 2012	Visiting Professor at the Department of Computer Science, Columbia University, NY, USA
June 2008 – Dec. 2008	Post-doc, INRIA, Sophia Antipolis, France – Project: MAESTRO, led by P. Nain;
Apr. 2007 – May 2008	Research engineer, EURECOM, Sophia Antipolis, France – Networking and Security Dept. – working with E.W. Biersack and P. Michiardi;
Nov. 2003 – Mar. 2007	PhD Dept. Information and Communication Technology, University of Trento, Italy
Sept. 2000 – Oct. 2003	Consultant, ICT Consulting, Milan, Italy – VHE in UMTS networks; – Mobile Intelligent Networks; – Evaluation of billing system solutions for NGN; – Gigabit Ethernet for Metropolitan Area Networks; – QoS and transition process aspects in IPv6 networks; – Support in implementation of MMS service in a mobile network;

## EDUCATION

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March 2007	PhD, Dept. Information and Communication Technology, University of Trento, Italy <ul style="list-style-type: none"><li>• Dissertation: “Performance Evaluation of Overlay Content Distribution Systems”; Advisor: Renato Lo Cigno; Co-advisor: E.W Biersack</li></ul>
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Sept. 1999 – Jul. 2000	<p>Master in Information Technology offered by CEFRIEL consortium (Politecnico di Milano – <a href="http://www.cefriel.it">www.cefriel.it</a>)</p> <ul style="list-style-type: none"> <li>• Research carried out in Network Systems group in collaboration with Cisco System</li> </ul>
Jul. 2000	<p>Telecommunication Engineer Laurea Degree from Politecnico di Milano</p> <ul style="list-style-type: none"> <li>• GPA: 95/100</li> <li>• Degree thesis: “Performance evaluation of video, voice and data traffic multiplied in IP/ATM networks”</li> </ul>

## TEACHING ACTIVITY

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2015/2016	<p>Courses taught</p> <ul style="list-style-type: none"> <li>– Computer Networks;</li> <li>– Data-intensive computing systems;</li> <li>– Network programming;</li> </ul>
before 2015	<p>Courses taught</p> <ul style="list-style-type: none"> <li>– Computer Networks;</li> <li>– Multimedia Embedded Systems;</li> <li>– Networked Embedded Systems;</li> <li>– Information Technology Skill;</li> </ul>

## TECHNICAL SKILLS

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General skills in performance evaluation tools. Specific expertise and interests in:

- Stochastic models for analysis of large systems
- Computing platforms: Unix, Linux, Windows 2000/XP
- Programming languages: C, C++, Java, Python, Perl, SQL
- Software: Matlab, Opnet, NIST Network Simulator
- Text formatting and office computing: LaTeX, Microsoft Office

## HONORS AND AWARDS

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Nov. 2006	Best Student Paper Award in the category “Communication Services” at IEEE Globecom 2006, San Francisco, CA, USA
2006	Student travel grant for participating in IEEE Infocom 2006, ACM Sigcomm 2006 and IEEE Globecom 2006

## PROFESSIONAL ACTIVITIES

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since 2012	TPC member of Ifip Networking and Sensornets)
2010-2011	TPC member of Ifip Networking
2009	TPC member of International Conference on Wireless Algorithms, Systems and Applications (WASA)
2003 present	Reviewer for – <i>Journals</i> : Computer Networks, IEEE Journal on Selected Area of Communications, Communication Letters, ACM/IEEE Transaction on Networking, IEEE Transaction on Parallel and Distributed Systems, Elsevier Journal of Peer-to-Peer Networking and Applications; – <i>Conferences</i> : Infocom (2007-present), Ifip Performance (2007), Sigmetrics (2007-present), Europar (2006-2007), ICC (2006-2008), Globecom (2005-2008), IEEE P2P (2007-present);

## MAIN PUBLICATIONS

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### Journals

- [J10] M. Pastorelli, A. Barbuzzo, D. Carra, M. Dell'Amico, P. Michiardi  
“HFSP: Bringing Size-Based Scheduling To Hadoop,”  
accepted to IEEE Transaction on Cloud Computing.
- [J9] M. Dell'Amico, D. Carra, P. Michiardi  
“PSBS: Practical Size-Based Scheduling,”  
accepted to IEEE Transaction on Computers.
- [J8] D. Carra, P. Michiardi, H. Salah, T. Strufe  
“On the Impact of Incentives in eMule: Analysis and Measurements of a Popular File-Sharing Application,”  
In IEEE Journal on Selected Area in Communications (JSAC), Vol. 31, No. 9, pp. 94-104, Sept. 2013.
- [J7] D. Carra, M. Steiner, P. Michiardi, E. Biersack, W. Effelsberg, T. En-Najjary  
“Characterization and Management of Popular Content in KAD,”  
In IEEE Transactions on Parallel and Distributed Systems, Vol. 24, No. 4, pp. 662-671, Apr. 2013.
- [J6] P. Michiardi, D. Carra, F. Albanese, A. Bestavros  
“Peer-Assisted Content Distribution on a Budget,”  
In Elsevier Computer Networks, Vol 56, No 7, pp. 2038-2048, May 2012.
- [J5] D. Carra, G. Neglia, P. Michiardi, F. Albanese  
“On the Robustness of BitTorrent Swarms to Greedy Peers,”  
In IEEE Transactions on Parallel and Distributed Systems, Vol. 22, No. 12, pp. 2071-2078, Dec. 2011.

- [J4] M. Steiner, D. Carra, E.W. Biersack  
 “Evaluating and improving the content access in KAD,”  
 In *Journal of Peer-to-Peer Networks and Applications*, Vol. 3:2, pp. 115-128, 2010.
- [J3] D. Carra, R. Lo Cigno, and E.W. Biersack  
 “Stochastic Graph Processes for Performance Evaluation of Content Delivery Applications in Overlay Networks,”  
 In *IEEE Transactions on Parallel and Distributed Systems*, Vol. 19, No. 2, pp. 247-261, Feb. 2008.
- [J2] D. Carra, R. Lo Cigno, and E.W. Biersack  
 “Graph Based Analysis of Mesh Overlay Streaming Systems,”  
 In *IEEE Journal on Selected Area in Communications (JSAC)*, Vol. 25, No. 9, pp. 1667-1677, Dec. 2007.
- [J1] E.W. Biersack, D. Carra, R. Lo Cigno, P. Rodriguez, and P. Felber  
 “Overlay Architectures for File Distribution: Fundamental Performance Analysis for Homogeneous and Heterogeneous Cases,”  
 In *Computer Networks*, Volume 51, No. 3, February 2007 , pp 901-917.

#### Conferences

- [C18] D. Carra, P. Michiardi  
 “Cost-based memory partitioning and management in Memcached,”  
*In Proc. of IEEE IMDM, co-located with VLDB*, Hawaii, USA, August 2015.
- [C17] M. Dell’Amico, D. Carra, M. Pastorelli, P. Michiardi  
 “Revisiting Size-Based Scheduling with Estimated Job Sizes,”  
*In Proc. of IEEE Mascots*, Paris, France, September 2014.
- [C16] D. Carra  
 “Controlling the Delay of Small Flows in Datacenters,”  
*In Proc. of DCPerf*, Madrid, Spain, July 2014.
- [C15] D. Carra, P. Michiardi  
 “Memory Partitioning in Memcached: An Experimental Performance Analysis,”  
*In Proc. of IEEE ICC*, Sydney, Australia, June 2014.
- [C14] M. Pastorelli, A. Barbuzzi, D. Carra, M. Dell’Amico, P. Michiardi  
 “HFSP: Size-based Scheduling for Hadoop,”  
*In Proc. of IEEE BigData*, Santa Clara, CA, USA, Oct. 2013.
- [C13] D. Carra, M. Steiner and P. Michiardi  
 “Adaptive Load Balancing in KAD,”  
*In Proc. of IEEE P2P*, Kyoto, Japan, Sept 2011.
- [C12] D. Carra, K. Avrachenkov, S. Alouf, A. Blanc, P. Nain, G. Post  
 “Passive Online RTT Estimation for Flow-Aware Routers Using One-Way Traffic,”  
*In Proc. of Networking*, Chennai, India, May 11-15, 2010.

- [C11] F. Esposito, I. Matta, P. Michiardi, N. Mitsutake, D. Carra  
 “Seed Scheduling for Peer-to-Peer Networks,”  
*In Proc. of International Symposium on Network Computing and Applications*, Boston, MA, USA, July 9-11, 2009.
- [C10] N. Laoutaris, D. Carra, and P. Michardi  
 “Uplink Allocation Beyond Choke/Unchoke or How to Divide and Conquer Best,”  
*In Proc. of ACM CoNext*, Madrid, Spain, Dec 9-12, 2008.
- [C9] D. Carra, G. Neglia, and P. Michiardi  
 “On the Impact of Greedy Strategies in BitTorrent Networks: the Case of BitTyrant,”  
*In Proc. of IEEE P2P*, Aachen, Germany, Sept. 2008.
- [C8] M. Steiner, D. Carra, and E.W. Biersack  
 “Faster Content Access in KAD,”  
*In Proc. of IEEE P2P*, Aachen, Germany, Sept. 2008.
- [C7] R. Lo Cigno, A. Russo, and D. Carra  
 “On some fundamental properties of P2P push/pull protocols,”  
*In Proc. of HUT-ICCE*, HoiAn, Vietnam, June 2008.  
 (invited paper)
- [C6] D. Carra, and E.W. Biersack  
 “Building a Reliable P2P System Out of Unreliable P2P Clients: The Case of KAD,”  
*In Proc. of ACM CoNext*, New York, NY, USA, Dec 11-13, 2007.
- [C5] D. Carra, R. Lo Cigno, and E.W. Biersack  
 “Graph Based Modeling of P2P Streaming Systems,”  
*In Proc. of IFIP Networking*, Atlanta, GA, USA, May 14 -18, 2007.
- [C4] D. Carra, R. Lo Cigno, and E.W. Biersack  
 “Content Delivery in Overlay Networks: a Stochastic Graph Processes Perspective,”  
*In Proc. of IEEE Globecom*, San Francisco, CA, USA, Nov. 27 - Dec. 1, 2006.
- [C3] D. Carra, R. Lo Cigno, and E.W. Biersack  
 “Fast Stochastic Analysis of P2P File Distribution Architectures,”  
*In Proc. of IEEE Globecom*, San Francisco, CA, USA, Nov. 27 - Dec. 1, 2006.
- [C2] D. Carra, and R. Lo Cigno  
 “Stochastic Analysis of Chain Based File Distribution Architectures with Heterogeneous Peers,”  
*In Proc. of WCW*, Sophia Antipolis, France, Sept. 12-13, 2005.
- [C1] P. Laface, D. Carra, and R. Lo Cigno  
 “A Performance Model for Multimedia Services Provisioning on Network Interfaces,”  
*In Proc. of QoSIP*, Catania, Italy, Feb. 2005.

## REFERENCES

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Renato Lo Cigno	Associate Professor at University of Trento c/o DISI, Via Sommarive 14, I-38050 POVO (TN) - Italy locigno@disi.unitn.it
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Dr. Philippe Nain      Director of Research INRIA, Sophia Antipolis  
c/o INRIA, 2004 route des Lucioles, BP 93, FR-06902 Sophia Antipolis, France  
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Dr. Pietro Michiardi      Professor at Eurecom, Sophia Antipolis  
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