

# Curriculum Vitae

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## Giovanni Schembra

Professore Associato

Dipartimento di Ingegneria Elettrica Elettronica e Informatica

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## Notizie biografiche essenziali

Data di nascita: 26 luglio 1968

Luogo di nascita: Catania (CT)

Nazionalità: Italiana

## Principali risultati e riconoscimenti

- Il Prof. Schembra ha pubblicato oltre 180 lavori su riviste e conferenze internazionali, secondo Google Scholar i suoi lavori hanno ricevuto oltre 1200 citazioni, e il suo H-index è 18.
- È stato coautore del White Paper “Software-Defined Networks for Future Networks and Services: Main Technical Challenges and Business Implications”, il White Paper dell’IEEE Future Directions che ha identificato per primo gli aspetti di ricerca e le principali direzioni tecniche e socio-economiche lungo le quali si sarebbero mossi i Telco Operators nel processo di “softwarizzazione” delle loro reti di telecomunicazioni.
- Ha avuto incarichi di rilievo nel settore delle reti SDN/NFV e 5G. In particolare:
  - È stato Guest Editor dello Special Issue on “Advanced Management of Softwarized Networks”, IEEE Transactions on Network and Service Management, 2020.
  - È stato Guest Editor dello Special Issue on “Latest Developments for the Management of Softwarized Networks”, IEEE Transactions on Network and Service Management, 2018.
  - È stato invitato come keynote speaker a Wispnet 2019, Chennai (India), March 21-23, 2019.
  - È stato Guest Editor di “2nd International Workshop on Network Intelligence (NI 2019) - Machine Learning for Networking,” in conjunction with IEEE INFOCOM 2019, 29 April – 2 May 2019, Paris, France.
  - È Associate Editor di IEEE Transactions on Network and Service Management.
  - È stato Demo Co-Chair del Workshop NETSOFT 2019, 24-28 June 2019 – Paris, France.
  - È stato Guest Editor dello Special Issue su “Novel Techniques for Managing Softwarized Networks”, IEEE Transactions on Network and Service Management, 2018.
  - È stato General Co-Chair del Workshop STET 2018 (The First International Workshop on “Smart network Technologies and Edge computing for the Tactile Internet”), co-located with NetSoft 2018, 25-29 June 2018 – Montreal, Canada.
  - È stato Workshop General Chair della Conferenza Internazionale NetSoft 2017, Bologna, 3-7 luglio 2017.
  - È stato coordinatore scientifico del progetto “Studio, definizione e prototipazione di un middleware per l’implementazione di servizi configurabili rivolti a utenti della rete mobile 4G Long Term Evolution (LTE)”, finanziato da Telecom Italia.

- È stato l'organizzatore della Networking Session "Stop the war of IoT protocol stacks" all'evento ufficiale della Comunità Europea ICT 2015, Lisbon, Portugal, 20-22 ottobre 2015.
- Nell'aprile 2015 è stato invitato a partecipare come Panelist al Panel "Management challenges and opportunities in SDN and NFV for telcos and enterprises" durante il Congresso internazionale IEEE NetSoft 2015, London, UK, 17/04/2015.
- Ha ricevuto il Premio "Ordine Ingegneri 1991" per la sua tesi di Laurea.

## Formazione

- DOTTORATO DI RICERCA: Dal novembre 1992 all'ottobre 1995 ha frequentato il Corso di Dottorato di Ricerca in Ingegneria Elettronica, Informatica e delle Telecomunicazioni dell'VIII Ciclo, con sede amministrativa presso l'Università di Palermo, e sede consorziata l'Università di Catania. Nel 1996 ha conseguito il titolo di Dottore di Ricerca presentando la dissertazione dal titolo "Modelli per la gestione di servizi multimediali su reti a larga banda".
- MASTER IN ICT: Vincitore di una borsa di studio, ha frequentato durante l'A.A. 1991/1992 il corso di Master in "Tecnologia dell'Informazione" presso il Cefriel di Milano. Ha conseguito nel 1992 il relativo Diploma, discutendo la Tesi "Probabilità di perdita per burst in un moltiplicatore di sorgenti bursty eterogenee".
- LAUREA IN INGEGNERIA: Laurea con voti 110/110 e lode in Ingegneria Elettronica (indirizzo Telecomunicazioni) presso l'Università degli Studi di Catania il 29 ottobre 1991, discutendo la tesi "Analisi di un Moltiplicatore ATM mediante approssimazione *Fluid flow*", svolta in collaborazione con la Scuola Superiore REISS ROMOLI di L'Aquila.

## Esperienza lavorativa presso l'Università degli Studi di Catania

- 2005-oggi: Professore Associato in ING-INF/03 "Telecomunicazioni", Università degli Studi di Catania
- 2001-2005: Ricercatore Universitario in ING-INF/03 "Telecomunicazioni", Università degli Studi di Catania
- 1999-2001: Assegnista di Ricerca in ING-INF/03 "Telecomunicazioni", Università degli Studi di Catania

## Direzione o partecipazione alle attività di un gruppo di ricerca caratterizzato da collaborazioni a livello nazionale o internazionale

### NAZIONALI

Collaborazione con l'Università di Genova su tematiche relative a Green Networking, Network Functions Virtualization (NFV) e Multi-Access Edge Computing (MEC), che ha portato alla pubblicazione dei seguenti articoli scientifici:

- Bruschi, Roberto, Davoli, Franco, Lago, Paolo, Lombardo, Alfio, Lombardo, Chiara, Rametta, Corrado, Schembra, Giovanni (2017). An SDN/NFV Platform for Personal Cloud Services. IEEE TRANSACTIONS ON NETWORK AND SERVICE MANAGEMENT, ISSN: 1932-4537, doi: 10.1109/TNSM.2017.2761860
- R. Bruschi, P. Lago, A. Lombardo, Schembra G (2014). Modeling Power Management in Networked Devices. COMPUTER COMMUNICATIONS, vol. 50, 683408, ISSN: 0140-3664
- R. Bruschi, A. Lombardo, C. Panarello, F. Podda, G. E. Santagati, Schembra G (2013). Active Window Management: Reducing Energy Consumption of TCP Congestion Control. In: Proc. of the 2013 IEEE International Conference on Communications (IEEE ICC 2013). Budapest, Ungheria, 9-13 Giugno 2013.

Collaborazione con il Politecnico di Torino su tematiche relative a Green Networking e al controllo di congestione in reti TCP/IP, che ha portato alla pubblicazione dei seguenti articoli scientifici:

- Ajmone Marsan, A. Lombardo, M. Meo, M. Mellia, C. Panarello, Schembra G (2016). Network interface power management and TCP congestion control: a troubled marriage. AUSTRALIAN JOURNAL OF ELECTRICAL & ELECTRONICS ENGINEERING, vol. 1, p. 67-76, ISSN: 1448-837X, doi: <http://dx.doi.org/10.1080/1448837X.2015.1093678>
- M. Ajmone Marsan, M. Mellia, M. Meo, LOMBARDO, Alfio, C. Panarello, SCHEMBRA, Giovanni (2013). Power Management and TCP Congestion Control: Friends or Foes?. In: Pr. of 22nd ITC Specialist Seminar on Energy Efficient and Green Networking (SSEEGN 2013). Christchurch, New Zealand, November 20-22, 2013
- C. Panarello, M. Ajmone Marsan, A. Lombardo, M. Mellia, M. Meo, Schembra G (2012). On the Intertwining between Capacity Scaling and TCP Congestion Control. In: Proc. of e-Energy 2012. Madrid (Spain), May 2012
- L. CHIARAVIGLIO, A. LOMBARDO, M. MELLIA, C. PANARELLO, SCHEMBRA G (2010). Energy Saving and Network Performance: a Trade-off Approach. In: Proc. 1st Int'l Conf. on Energy-Efficient Computing and Networking. p. 41-50, New York:ACM, Passau, Germany, April 13-15, 2010, doi: 10.1145/1791314.1791321

Collaborazione con l'Università di Pavia su tematiche relative al controllo della qualità del video in reti peer-to-peer (P2P), che ha portato alla pubblicazione dei seguenti articoli scientifici:

- L. Favalli, M. Folli, LOMBARDO, Alfio, D. Reforgiato, SCHEMBRA, Giovanni (2012). Design of a service platform for delay-sensitive video streaming applications based on multicast p2p and scalable MDC encoding. COMPUTER COMMUNICATIONS, vol. 35, p. 2254-2263, ISSN: 0140-3664
- L. Favalli, M. Folli, D. Reforgiato, A. Lombardo, G. Schembra, "Real-time multicast P2P video streaming architecture based on scalable multiple descriptions," in Proc. of Networked & Electronic Media (2011 NEM Summit), Torino, Italy, September 27-29, 2011

Collaborazione con l'Università di Bologna su tematiche relative ai software router, che ha portato alla pubblicazione del seguente articolo scientifico:

- G. CALARCO, C. RAFFAELLI, G. TUSA, SCHEMBRA, Giovanni (2005). Comparative Analysis of SMP Click Scheduling Techniques. In: Proc. of QoSIP 2005. p. 379-389, Catania, Italy, February 2-4 2005

## **INTERNAZIONALI**

Responsabile scientifico dei seguenti progetti europei:

- DiMoViS Experiment per il progetto H2020 FIRE Triangle
- TouristEyes Experiment per il progetto H2020 5GINFIRE
- VISION (VideoSurveillance for Impaired persons) per il progetto H2020 FLAME

COLLABORAZIONE INTERNAZIONALE con l'University of Wuerzburg (Germany) su tematiche relative al chaining in software networks, che ha portato alla pubblicazione del seguente articolo scientifico:

- Loh, Frank, Burger, Valentin, Wamser, Florian, Tran-Gia, Phuoc, Schembra, Giovanni, Rametta, Corrado (2017). Performance Evaluation of Video Streaming Service Chains in Software Networks with Task Graph Reduction. In: Proc. of the 2017 29th International Teletraffic Congress (ITC 29). p. 36-41, ISBN: 978-0-9883045-3-6, doi: 10.23919/ITC.2017.8065708

COLLABORAZIONE INTERNAZIONALE con University of California, Los Angeles (UCLA, USA) su tematiche relative a tecniche di controllo di flusso in reti TCP/IP, che ha portato alla pubblicazione del seguente articolo scientifico:

- M. BARBERA, M. GERLA, A. LOMBARDO, C. PANARELLO, M. Y. SANADIDI, SCHEMBRA G (2008). Active Window Management: Performance Assessment through an Extensive Comparison with XCP. In: Proc. of IFIP Networking 2008. p. 679-690, Singapore, 5 - 9 May 2008

COLLABORAZIONE INTERNAZIONALE con Universitat Politècnica de Catalunya · BarcelonaTech (UPC, Spain) e Bilkent University (Turkey) su tematiche relative alla trasmissione di video su reti UMTS

- N. AKAR, M. BARBERA, L. BUDZISZ, R. FERRÙS, E. KANKAYA, SCHEMBRA, Giovanni (2007). A Performance Evaluation Framework of a Rate-Controlled MPEG Video Transmission over UMTS Networks. In: Proc. of the Second IEEE Workshop on multiMedia Applications over Wireless Networks (MediaWiN 2007). p. 63-68, Aveiro, Portugal, July 1 2007, doi: 10.1109/ISCC.2007.4381644

COLLABORAZIONE INTERNAZIONALE con l'University of Surrey (UK) su tematiche relative alla trasmissione di video MPEG 4 su reti Wireless

- M. Barbera, C. H. Liew, A. M. Kondo, G. Schembra, "An Analytical Model for MPEG4 Transmission in Wireless Network", Proc. NEWCOM-ACORN Joint Workshop, Vienna, Austria, September 20-22, 2006.

## INDUSTRIALI

COLLABORAZIONE INDUSTRIALE con Telecom Italia su tematiche relative alle softwarized networks basate su paradigma SDN/NFV, che ha portato alla pubblicazione dei seguenti articoli scientifici:

- V. D'Amico, A. Lombardo, M. Melita, C. Rametta, Schembra G (2016). An SDN/NFV Telco Operator Platform for Video Broadcasting. IEEE COMMUNICATIONS MAGAZINE, vol. 54, p. 122-128, ISSN: 0163-6804, doi: 10.1109/MCOM.2016.7588280
- G. Faraci, A. Lombardo, A. Manzalini, C. Rametta, V. Riccobene, Schembra G (2015). An Open Framework to Enable NetFATE (Network Functions At The Edge). In: Proc. of IEEE Workshop on Management Issues in SDN, SDI and NFV (Mission 2015). London, UK, April 13-17, 2015.
- Lombardo A, A. Manzalini, V. Riccobene, Schembra G (2014). An Analytical Tool for Performance Evaluation of Software Defined Networking Services. In: Proc. of IEEE SDNMO 2014. Krakow, Poland, 9th May 2014. Krakow, Poland, 9th May 2014

## Altre esperienze

- È stato Reviewer di numerose riviste scientifiche internazionali prestigiose, quali *ACM/IEEE Transactions on Networking*, *IEEE Transactions on Circuits and Systems for Video Technology*, *IEEE Transactions on Communications*, *IEEE Communications Letters*, *IEEE Signal Processing Letters*, *European Transactions on Networking*, *Transactions on Multimedia*, *Performance Evaluation*, *Journal on Networks*, *Computer Networks*, *Wireless Communications and Mobile Computing*, *Wireless Networks*.
- È stato membro del Technical Program Committee di numerose conferenze internazionali
- Nel 2002, con D.R. n. 986, è stato componente della Commissione Tecnica per il Pubblico Incanto per la fornitura "chiavi in mano" di un impianto per fonia e dati presso il Laboratorio Nazionale del Sud - Sezione Didattica e Ricerca - nel C.U. di S. Sofia, Catania, per l'importo complessivo presunto a base d'asta di € 451.899,79, oltre IVA.
- Nel 2002 è stato componente della Commissione Tecnica dell'Università degli Studi di Catania per la Gara per affidamento organizzazione Corso di Formazione per specialisti di reti per diplomati e per laureati.
- Nel 2002 presso l'Università degli Studi di Messina è stato componente della Commissione Tecnica per il Pubblico Incanto per la fornitura "chiavi in mano" di una centrale telefonica per le nuove sedi delle Facoltà di Medicina Veterinaria e di Lettere e Filosofia della suddetta Università.
- Negli anni 2003-2004 presso l'Assessorato Bilancio e Finanze della Regione Siciliana è stato componente della commissione aggiudicatrice della gara per la scelta di un socio per la costituzione di una società per azioni avente ad oggetto lo svolgimento delle attività informatiche di competenza delle amministrazioni regionali e al quale affidare la realizzazione della piattaforma telematica integrata della Regione Siciliana con importo indicativo di Euro 50.000.000,00, pubblicato sulla Gazzetta Ufficiale della Regione Siciliana, Parte II, N. 47, del 22/11/2002.
- Nel periodo 1996-98 ha usufruito di contratti di prestazione d'opera presso l'Istituto di Informatica e Telecomunicazioni dell'Università degli Studi di Catania per ricerche svolte nell'ambito del progetto della Comunità Europea ACTS AC036 DOLMEN ("*Service Machine Development for an Open Long-term Mobile and Fixed Network Environment*") (coordinatore prof. A. Lombardo, inizio attività '95, durata quadriennale), aventi come obiettivo la definizione di un'architettura object-oriented per lo sviluppo di servizi in ambiente mobile.
- Nel febbraio 2004 ha partecipato alla creazione dello spin-off universitario LightComm srl, avente come mission la ricerca nel settore della trasmissione multimediale in reti wireless e Internet, e la progettazione e lo sviluppo di sistemi di trasmissione audio/video.

## Attività didattica:

Il Prof. Schembra ha tenuto numerosi corsi universitari, quali:

- Fondamenti di Telecomunicazioni
- Metodi per l'Analisi e il Dimensionamento delle Reti
- Metodi per l'Analisi e il Dimensionamento delle Reti e Sistemi Telematici
- Comunicazioni Elettriche / Comunicazioni Digitali
- Elaborazione di Segnali per Applicazioni Multimediali

È stato inoltre relatore di numerose tesi di laurea.

Nel giugno 2002 è stato docente del modulo "Traffic Models for Network Performance Evaluation" nell'ambito del Progetto CNIT di Teledottorato, riguardante la didattica a distanza tramite una rete satellitare e terrestre, e rivolto agli studenti di Dottorato nei settori dell'Ingegneria delle Telecomunicazioni.

Ha infine tenuto seminari e tutorial nell'ambito reti SDN/NFV in numerosi contesti nazionali e internazionali.

## Interessi di ricerca

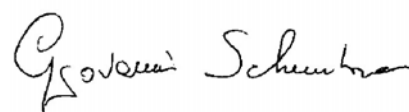
Attualmente i principali temi di ricerca di interesse del Prof. Schembra sono:

- Paradigmi Software Defined Networking (SDN) e Virtual Network Function (NFV) applicati al processo di softwarizzazione delle reti di telecomunicazioni.
- Ingegneria del traffico nella Future Internet.
- Cloud computing, Fog Computing e Multi-Access Edge Computing (MEC)
- Allocazione delle risorse, orchestrazione in Reti 5G
- Verticals in reti 5G
- Tecniche di intelligenza artificiale per l'orchestrazione e la gestione della rete Internet di nuova generazione

A fronte della propria attività scientifica, il Prof. Schembra ha prodotto 177 lavori, pubblicati su riviste o su atti di conferenze internazionali, ed ha più volte rivestito il ruolo di revisore di articoli scientifici sottomessi a riviste internazionali. L'elenco delle pubblicazioni è allegato in calce a questo documento.

Catania, 01/03/2021

Firma



## Elenco delle pubblicazioni

### Lavori pubblicati su riviste internazionali

- [R65] C. Grasso, K. Eswar K.N., P. Nagaradjane, M. Ramesh, G. Schembra, "Designing the Tactile Support Engine to assist time-critical applications at the edge of a 5G network," *Computer Communications*, Volume 166, Pages 226-233, January 2021.
- [R64] G. Faraci, C. Grasso and G. Schembra, "Design of a 5G Network Slice Extension With MEC UAVs Managed With Reinforcement Learning," in *IEEE Journal on Selected Areas in Communications*, vol. 38, no. 10, pp. 2356-2371, Oct. 2020, doi: 10.1109/JSAC.2020.3000416.
- [R63] G. Faraci, C. Grasso, G. Schembra, "Fog in the Clouds: UAVs to Provide Edge Computing to IoT Devices," *ACM Transactions on Internet Technology*, Vol. 20, No. 3, August 2020.
- [R62] G. Faraci, A. Raciti, S. A. Rizzo, G. Schembra, "Green wireless power transfer system for a drone fleet managed by reinforcement learning in smart industry," *Elsevier Applied Energy*, Vol. 259, 1 February 2020.
- [R61] C. Grasso and G. Schembra, "5G-Handler: A Network Service for Handover Detection in 5G Networks," Special issue article on *Internet Technology Letters*, Wiley Online Library
- [R60] C. Grasso and G. Schembra, "A Fleet of MEC UAVs to Extend a 5G Network Slice for Video Monitoring with Low-Latency Constraints," Published in *MDPI Special Issue on Softwarization at the Network Edge for the Tactile Internet*, January 2019, Volume 8, Issue 1,3
- [R59] R. Bruschi, F. Davoli, P. Lago, A. Lombardo, C. Lombardo, C. Rametta, G. Schembra, "An SDN/NFV Platform for Personal Cloud Services," in *IEEE Transactions on Network and Service Management*, vol. 14, no. 4, pp. 1143-1156, Dec. 2017. doi: 10.1109/TNSM.2017.2761860
- [R58] L. Galluccio, A. Lombardo, G. Morabito, S. Palazzo, C. Panarello and G. Schembra, "Capacity of a Binary Droplet-Based Microfluidic Channel with Memory and Anticipation for Flow-Induced Molecular Communications," in *IEEE Transactions on Communications*, vol. PP, no. 99, pp. 1-1. doi: 10.1109/TCOMM.2017.2755649
- [R57] S. Conti, G. Faraci, R. Nicolosi, S. A. Rizzo and G. Schembra, "Battery Management in a Green Fog-Computing Node: a Reinforcement-Learning Approach," in *IEEE Access*, vol. 5, pp. 21126-21138, 2017. doi: 10.1109/ACCESS.2017.2755588
- [R56] S. D'Oro, L. Galluccio, S. Palazzo, G. Schembra, "A Game Theoretic Approach for Distributed Resource Allocation and Orchestration of Softwarized Networks," in *IEEE Journal on Selected Areas in Communications*, vol. 35, no. 3, pp. 721-735, March 2017.
- [R55] C. Rametta, G. Schembra, "Designing a softwarized network deployed on a fleet of drones for rural zone monitoring," in *Future Internet*, vol. 9, no. 1, March 2017.
- [R54] S. D'oro, L. Galluccio, S. Palazzo, G. Schembra, "Exploiting Congestion Games to Achieve Distributed Service Chaining in NFV Networks," *IEEE Journal on Selected Areas in Communications*, vol. 35, no. 7, pp. 405-420, Feb. 2017.
- [R53] G. Faraci, A. Lombardo, G. Schembra, "A Processor-Sharing Scheduling Strategy for NFV Nodes," *Journal of Electrical and Computer Engineering*, Special Issue on Design of High Throughput and Cost-Efficient Data Center Networks, Volume 2016, Article ID 3583962, <http://dx.doi.org/10.1155/2016/3583962>.
- [R52] V. D'Amico, A. Lombardo, M. Melita, C. Rametta, G. Schembra, "An SDN/NFV Telco Operator Platform for Video Broadcasting," *IEEE Communications Magazine*, vol. 54, no. 10, pp. 122-128, October 2016..
- [R51] S. Conti, G. Faraci, A. La Corte, R. Nicolosi, S. A. Rizzo, G. Schembra, "Effect of Islanding and Telecontrolled switches on Distribution System Reliability Considering Load and Green-Energy Fluctuations," *Journal of Applied Sciences*, Special Issue on "Smart Grid: Convergence and Interoperability", Vol. 6, Issue 5, 2016. doi:10.3390/app6050138.

- [R50] M. Ajmone Marsan, A. Lombardo, M. Meo, M. Mellia, C. Panarello, G. Schembra, "Network Interface Power Management and TCP Congestion Control: a Troubled Marriage," *AJEEE: Australian Journal of Electrical & Electronics Engineering*, ISSN: 1448-837X, Volume 13, Issue 1, January 2016.
- [R49] G. Faraci, G. Schembra, "An Analytical Model to Design and Manage a Green SDN/NFV CPE Node," *IEEE Transactions on Network and Service Management*, Vol. 12, Issue 3, September 2015, pp. 435 – 450, DOI: 10.1109/TNSM.2015.2454293.
- [R48] G. Incarbone, G. Schembra, "A Business Model for Multimedia Streaming in Mobile Clouds," *IEEE Transactions on Network and Service Management*, Volume 11, Issue 3, September 2014, pp. 376 – 389, DOI: 10.1109/TNSM.2014.2346084.
- [R47] A. Lombardo, C. Panarello, G. Schembra, "A Model-Assisted Cross-Layer Design of an Energy-Efficient Mobile Video Cloud," *IEEE Transactions on Multimedia*, Volume: 16, Issue: 88, August 2014, DOI: 10.1109/TMM.2014.2350257.
- [R46] A. Lombardo, V. Riccobene, G. Schembra, "Design of a Traffic-Aware Governor for Green Routers," *Journal of Electrical and Computer Engineering*, vol. 2014 (2014), Article ID 683408, 12 pages, dx.doi.org/10.1155/2014/683408.
- [R45] R. Bruschi, P. Lago, A. Lombardo, G. Schembra, "Modeling Power Management in Networked Devices," *Elsevier Computer Communications*, Volume 50, 1 September 2014, Pages 95–109, DOI: 10.1016/j.comcom.2014.03.027.
- [R44] G. Incarbone, A. Lombardo, D. Reforgiato, G. Schembra, "A comprehensive platform to manage peer churn and bandwidth fluctuations in real-time multimedia P2P networks," *Journal of Multimedia Tools and Applications*, vol. 63, no. 3, April 2013, pp. 851–873, DOI: 10.1007/s11042-011-0943-6.
- [R43] A. Lombardo, D. Reforgiato, V. Riccobene, G. Schembra, "Design of a Temperature-Constrained Governor to Save Energy in an Open Multi-Frequency Green Router," *International Journal of Business Data Communications and Networking (IJBDCN)*, Special Issue (SI) on green networking and computing of the IJBDCN journal, vol. 9, no. 3, 2013.
- [R42] A. Lombardo, C. Panarello, G. Schembra, "EE-ARQ: a Green ARQ-Based Algorithm for the Transmission of Video Streams on Noise Wireless Channels," *International Journal of Network Protocols and Algorithms* (ISSN: 1943-3581), Vol. 5, No. 1, 2013.
- [R41] A. Lombardo, A. Masto, D. Reforgiato, G. Schembra, "A Dynamic Jitter-Controlled Tree-Based P2P Network Topology for Multipoint Multimedia Applications," *Journal of Interconnection Networks*, Vol. 13, Issue 01 and 02, March & June 2012, DOI: 10.1142/S021926591250003X.
- [R40] L. Favalli, M. Folli, A. Lombardo, D. Reforgiato, G. Schembra, "Design of a service platform for delay-sensitive video streaming applications based on multicast p2p and scalable MDC encoding," *Computer Communications*, Vol. 35, No. 18. (November 2012), pp. 2254-2263, 2263, doi:10.1016/j.comcom.2012.08.006.
- [R39] A. Lombardo, D. Reforgiato, V. Riccobene, G. Schembra, "NetFPGA Hardware Modules for Input, Output and EWMA Bit-Rate Computation," *International Journal of Future Generation Communication and Networking*, Vol. 5, No. 2, June 2012. ISSN: 2005-4270.
- [R38] L. Favalli, M. Folli, A. Lombardo, D. Reforgiato, G. Schembra, "A P2P Platform for Real-Time Multicast Video Streaming Leveraging on Scalable Multiple Descriptions to Cope with Bandwidth Fluctuations," *International Journal of Computer Networks & Communications (IJCNC)* Vol.3, No.6, pp. 71-94, November 2011, DOI : 10.5121/ijcnc.2011.3605.
- [R37] L. Linguaglossa, A. Lombardo, D. Reforgiato, G. Schembra, "Performance comparison between the Click Modular Router and the NetFPGA Router," *International Journal of Computer Networks & Communications (IJCNC)*, Vol.3, No.5, pp. 39-52, September 2011, DOI : 10.5121/ijcnc.2011.3503.
- [R36] A. Lombardo, C. Panarello, G. Schembra, "Achieving Energy Savings and QoS in Internet Access Routers," *ACM SIGMETRICS Performance Evaluation Review (PER)*, Vol. 38, Issue 3, pp. 76-80, December 2010, ISSN: 0163-5999.



- [R35] M. Barbera, A. Lombardo, C. Panarello, G. Schembra, "Queue Stability Analysis and Performance Evaluation of a TCP-Compliant Window Management Mechanism," *IEEE Transactions on Networking*, vol. 18, no. 4, pp. 1275-1288, Aug. 2010.
- [R34] A. Lombardo, D. Reforgiato, G. Schembra, "P2P and MPEG FGS Encoding: A Good Recipe for Multipoint Video Transmission on the Internet," *International Journal of Digital Multimedia Broadcasting*, vol. 2009, Article ID 453471, 21 pages, 2009. doi:10.1155/2009/453471.
- [R33] M. Barbera, A. Lombardo, G. Schembra, A. C. Trecarichi, "Improving Fairness in a WRED-based DiffServ Network: A Fluid Flow Approach," *Performance Evaluation*, Vol. 65, No. 10, pp. 759-783, 2008.
- [R32] A. Lombardo, F. Licandro, G. Schembra, "Multipath Routing and Rate-Controlled Video Encoding in Wireless Video Surveillance Networks," *Multimedia Systems*, Volume 14, Number 3, pp. 155-165, August 2008, DOI: 10.1007/s00530-008-0121-5.
- [R31] F. Licandro, G. Schembra, "Wireless Mesh Networks to Support Video-Surveillance: Architecture, Protocol and Implementation Issues," *EURASIP Journal on Wireless Communications and Networking, Special Issue on MobileMAN (Mobile Multi-hop Ad Hoc Networks): From Theory to Reality*, vol. 2007, Article ID 31976, 13 pages, 2007.
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