

Carlo Augusto Grazia

carloaugusto.grazia@unimore.it



contact

1538/b Via Santa
Liberata
Spilamberto (MO),
Italy 41057

+39 349 4351546

[home page](#)

languages

italian mother tongue
english fluency

programming

♥ C, Java
Python, C++

editing

LaTeX, HTML

education

- 2013–2015 **Ph.D.** in Information and Communication Technology The University of Modena and Reggio Emilia
Winner of the best Ph.D. thesis.
- 2010–2012 **Master** degree in Computer Science The University of Bologna
110/110 cum laude
Implementation of a tool for static deadlock analysis over an ABS core
ABS is a formal concurrent Object Oriented language born with an European Project HATS. The tool is based on an Inference Algorithm and an Analyzer..
- 2007–2010 **Bachelor** degree in Computer Science The University of Modena and Reggio Emilia
110/110 cum laude
Analysis of transcription factor binding site tool inside co-regulated genes
Bioinformatic tool is based on statistical representation for DNA mutation.
- 2002–2007 **Technical Expert** in Electr. & Telecomm. I.T. Enrico Fermi, Modena
100/100

experience

Full Time

- 2017–now **UNIVERSITY OF MODENA AND REGGIO EMILIA** Modena, Italy
Assistant Professor
- 2016–2017 **UNIVERSITY OF MODENA AND REGGIO EMILIA** Modena, Italy
Research Fellow
- 2013–2016 **UNIVERSITY OF MODENA AND REGGIO EMILIA** Modena, Italy
PhD Student in ICT
Developed networking solutions for QoS provisioning in wireless/satellite environments.
Detailed achievements:
 - Learned how to make research
 - Investigated networking area:
 - Packet Scheduling
 - Active Queue Management
 - Middleware and Cross-Layering Solutions
 - Transmission Control Protocol
 - Larned how to merge research with industry through european projects
- 2014-2015 **UNIVERSITY OF MODENA AND REGGIO EMILIA** Modena, Italy
Co.Co.Co
Developed middleware solutions for PPDR Systems

European Project

- 2013-2015 **The European FP7 Project PPDR-TC** Modena, Italy
Public Protection and Disaster Relief Transformation Center
Web Site for more information: <http://www.ppdr-tc.eu/>
- 2012 **European Project EU-FET HATS** Bologna, Italy
Highly Adaptable and Trustworthy Software using Formal Method
Web Site for more information: <http://www.hats-project.eu/>

awards

- 2017 **Best Ph.D. Student** The ICT Dottorate School, UNIMORE
Awarded to the best research activity by the ICT school
- 2014 **Certificate of Merit** The University of Modena and Reggio Emilia
Awarded to the best researcher handed by the Chancellor
- 2013 **Best Presentation** The University of Padova
Awarded to the best presentation at the SSIE Summer School in Brixen
- 2012 **Letter of Merit** The University of Bologna
Awarded to the top student posted by the Chancellor
- 2010 **Scholarship** The University of Modena and Reggio Emilia
Awarded to the top bachelor thesis

communication skills

- 2013–2015 **Oral Presentation** Conferences and Workshops
Presented the research I conducted in:
- SSIE Summer School, 2013, Brixen
 - Workshop SFINGI, 2013, Modena
 - ICCST Conference, 2013, Hammamet
 - IEEE ICC Conference, 2014, Sydney
 - IEEE WiMob Conference, 2014, Larnaca
 - INW Workshop, 2015, Cavalese
 - IEEE PerCom Conference, 2015, St.Louis
- 2014–2015 **Teaching** University of Modena and Reggio Emilia
Master Lessons on Networking, packet scheduling and network simulators

interests

professional: networking algorithm, wireless communications, formal analysis, software design
personal: music, running, Rubik's cube

publications

Article in peer-reviewed Journal/Magazine

M. Casoni, Carlo A. Grazia, M. Klapez
SDN-Based Resource Pooling to Provide Transparent Multi-Path Communications
IEEE Communication Magazine, DOI: 10.1109/MCOM.2017.1601214

M. Klapez, Carlo A. Grazia, M. Casoni
A Hybrid Algorithm to combine Redundancy and Concurrency in Virtual Network Resource

Pooling

Internet Technology Letters, John Wiley & Sons, DOI: 10.1002/itl2.18

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

How to avoid TCP Congestion without dropping Packets: an Effective AQM called PINK
accepted for publication in the Computer Communications Journal, Elsevier, ISSN: 0140-3664 , available online DOI: 10.1016/j.comcom.2017.02.010

M. Casoni, Carlo A. Grazia, P. Valente

Achieving a High Throughput and a Low Latency through a Modular Packet Scheduler
accepted for publication in the International Journal of Communication Networks and Distributed Systems, Inderscience Publishers, ISSN: 1754-3916.

M. Casoni, Carlo A. Grazia, M. Klapez

A software-defined 5G cellular network with links virtually pooled for public safety operators
Transactions on Emerging Telecommunications Technologies, John Wiley & Sons, 2016, DOI: 10.1002/ett.3092

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

QRM: a Queue Rate Management for fairness and TCP flooding protection in mission-critical networks

Computer Networks, Elsevier, pp. 54-65, Vol.93, December 2015, ISSN: 1389-1286, DOI: 10.1016/j.comnet.2015.10.010

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

A congestion control middleware layer with dynamic bandwidth management for satellite communications

International Journal of Satellite Communications and Networking, John Wiley & Sons, 2015, ISSN: 1542-0981, DOI: 10.1002/sat.1129

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

Integration of Satellite and LTE for Disaster Recovery

Communications Magazine, IEEE, March 2015, Pages 47-53, DOI: 10.1109/MCOM.2015.7060481

M. Casoni, Carlo A. Grazia, P. Valente

TEMPEST: a new Test Environment for Performance Evaluation of the Scheduling of packets

Simulation Modelling Practice and Theory (SIMPAT), Elsevier, Volume 49, December 2014, Pages 258–276, ISSN: 1569-190X, DOI: 10.1016/j.simpat.2014.10.005

M. Casoni, Carlo A. Grazia, P. Valente

A Green, Modular and Fair Packet Scheduler for boosting Throughput over Wireless Links

Journal of Networking Technology (JNT), Vol. 4, Issue 4, pp. 192-202, December 2013, ISSN: 0976-898X

Article in International Conference/Workshop

Carlo A. Grazia

Towards 1 ms WLAN Latency

Accepted in IEEE 2018 WiMob workshop on Emergency Networks for Public Protection and Disaster Relief, EN4PPDR'18, October 15-17, 2018, Limassol, Cyprus.

M. Klapez, Carlo A. Grazia, S. Zennaro, M. Cozzani, M. Casoni

First Experiences with Earthcloud, a Low-Cost, Cloud-Based IoT Seismic Alert System

Accepted in IEEE 2018 WiMob workshop on Emergency Networks for Public Protection and Disaster Relief, EN4PPDR'18, October 15-17, 2018, Limassol, Cyprus.

Carlo A. Grazia

On the Performance of IEEE 802.11P Outside the Context of a BSS Networks

Proc. of IEEE 2018 International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), June 9-12, 2018, Bologna, Italy.

Carlo A. Grazia, N. Patriciello, Toke Hoiland-Jorgensen, M. Klapez, M. Casoni, J. Manges-Bafalluy

Adapting TCP Small Queues for IEEE 802.11 Networks

Proc. of IEEE 2018 International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), June 9-12, 2018, Bologna, Italy.

M. Klapez, Carlo A. Grazia, M. Casoni

Energy Savings of Sleep Modes enabled by 5G Software-Defined Heterogeneous Networks

Proc. of IEEE 2018 International Forum on Research and Technologies for Society and Industry, RTSI 2018, September 10-13, 2018, Palermo, Italy.

M. Klapez, Carlo A. Grazia, M. Casoni

Quantifying Sleep-Related Energy Savings in Indoor LTE HetNets Radio Access

Proc. of IEEE 2018 International conference on selected topics in Mobile and Wireless Networking, MoWNet 2018, June 20-22, 2018, Tangier, Morocco.

Carlo A. Grazia, M. Klapez, M. Casoni

The Bufferboost Effect: when Drops and Redundancy boost the Throughput

Proc. of IEEE 2018 International Symposium on Networks, Computers and Communications (ISNCC): Wireless and Mobile Communications & Networking, June 19-21, 2018, Rome, Italy.

Toke Hoiland-Jorgensen, Carlo Augusto Grazia, Per Hurtig, Anna Brunstrom

Flent: The FLExible Network Tester

Proc. of 11th EAI ValueTools Conference, December 5-7, 2017, Venice, Italy, DOI: 10.1145/3150928.3

Carlo A. Grazia, M. Casoni

Technology independent Scheduling Architecture for V2X Communications: a Flexible approach

IEEE WiMob Conference, Workshop EN4PPDR, October 9-11, 2017, Rome, Italy, DOI: 10.1109/WIMOB.2017.8115826

Carlo A. Grazia, N. Patriciello, M. Klapez, M. Casoni

Which AQM fits IoT better?

accepted at the next IEEE RTSI workshop, Modena, Italy, September 11-13 2017.

M. Klapez, Carlo A. Grazia, M. Casoni

Reducing Cellular Networks Power Consumption: the Role of Resource Pooling and Cooperation

Proc. of the IEEE ConTEL Conference, Zagreb, Croatia, 28-30 June 2017, pp.107-114, ISBN:9789531842242.

Carlo A. Grazia, N. Patriciello, M. Klapez, M. Casoni

A Cross-Comparison between TCP and AQM Algorithms: which is the Best Couple for Congestion Control?

Proc. of the IEEE ConTEL Conference, Zagreb, Croatia, 28-30 June 2017, pp.75-82, ISBN:9789531842242.

Carlo A. Grazia, N. Patriciello, M. Klapez, M. Casoni

Mitigating Congestion and Bufferbloat on Satellite Networks through a Rate-Based AQM

Proc. of the IEEE ICC International Conference on Communications, May 21-25, 2017, Paris, France, pp.4477-4482, ISBN:9781467389983.

Carlo A. Grazia, N. Patriciello, M. Klapez, M. Casoni

Enabling Smart Environments by avoiding TCP Congestion through PINK: a no-drop AQM

Proc. of the IEEE WiMob Conference, Workshop SEUNET, October 17-19, 2016, New York, USA.

M. Klapez, Carlo A. Grazia, M. Casoni

owards Massively Multipath Transmissions for Public Safety Communications

Proc. of the IEEE WiMob Conference, Workshop EN4PPDR, October 17-19, 2016, New York, USA.

N. Patriciello, Carlo A. Grazia, J. Nunez-Martinez, J. Baranda, J. Manges-Bafalluy, M. Casoni *Performance Evaluation of Backpressure Routing in Integrated Satellite-terrestrial Backhaul for PPDR Networks*

Proc. of the IEEE WiMob Conference, Workshop EN4PPDR, October 17-19, 2016, New York, USA.

M. Casoni, Carlo A. Grazia, M. Klapez

Enabling Resource Pooling in Wireless Networks through Software-Defined Orchestration

Proc. of the IEEE ICC International Conference on Communications, May 22-27, 2016, Kuala Lumpur, Malaysia.

M. Casoni, Carlo A. Grazia, M. Klapez

An SDN and CPS based opportunistic Upload Splitting for mobile users

Proc. of the EAI International Conference on CYber physiCaL systems, IoT and sensors Networks (CYCLONE), October 26, 2015, Rome, Italy.

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

DyBRA: a Dynamic Bandwidth Reservation Algorithm to enhance Satellite Communications

Proc. of the IEEE Global Communications Conference (GLOBECOM), December 6-10, 2015, San Diego, California (USA).

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

A Cooperative Middleware for Enhancing TCP Performance over High Delay Networks

Proc. of the IEEE Global Communications Conference (GLOBECOM), December 6-10, 2015, San Diego, California (USA).

Carlo A. Grazia, M. Klapez, N. Patriciello, M. Casoni

PINK: Proactive INjection into ack, a queue manager to impose fair resource allocation among TCP flows

Proc. of the IEEE WiMob Conference, Workshop EN4PPDR, October 19-21, 2015, Abu Dhabi, UAE.

Carlo A. Grazia, M. Klapez, N. Patriciello, M. Casoni, H. Gierszal, P. Tyczka, K. Pawlina, A. Amditis, E. Sdongos

Performance Evaluation and Economic Modelling of PPDR Communication Systems

Proc. of the IEEE WiMob Conference, Workshop EN4PPDR, October 19-21, 2015, Abu Dhabi, UAE.

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

Implementation and Validation of TCP Options and Congestion Control Algorithms for ns-3

Proc. of the 2015 ACM Workshop on ns-3 (WNS3), 13-14 May 2015, Barcelona (Spain), pp. 112-119, ISBN: 978-1-4503-3375-7, DOI: 10.1145/2756509.2756518

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

Towards Emergency Networks Security with Per-Flow Queue Rate Management

International Workshop on Pervasive Networks for Emergency Management (PerNEM), March 27, 2015, St. Louis, Missouri

M. Casoni, Carlo A. Grazia, M. Klapez, N. Patriciello

Reducing Latency in Satellite Emergency Networks through a Cooperative Transmission Control

Proc. of IEEE Global Communications Conference (GLOBECOM), December 8-12, 2014, Austin, Texas

Carlo A. Grazia, M. Casoni, P. Valente

TEMPEST: Test EnvironMent for Performance Evaluation of the Scheduling of packeTs

Proc. of IEEE Emergency Networks for Public Protection and Disaster Relief (EN4PPDR)

Workshop within IEEE WiMob 2014, 8 October 2014, Larnaca (Cyprus), pp.300-307, ISBN: 978-1-4799-5040-9

Carlo A. Grazia, M. Klapez, N. Patriciello, M. Casoni, A. Amditis, E. Sdongos, H. Gierszal, D. Kanakidis, C. Katsigiannis, K. Romanowski, P. Simplicio, A. Oliveira, S. Sonander, J. Jackson

Integration between Terrestrial and Satellite Networks: the PPDR-TC vision

Proc. of IEEE Emergency Networks for Public Protection and Disaster Relief (EN4PPDR) Workshop within IEEE WiMob 2014, 8 October 2014, Larnaca (Cyprus), pp.202-209, ISBN: 978-1-4799-5040-9

M. Casoni, Carlo A. Grazia, P. Valente

A Low-Latency and High-Throughput Scheduler for Emergency and Wireless Networks

IEEE International Conference on Communications (ICC), June 10-14, 2014, Sydney, Australia

M. Casoni, Carlo A. Grazia, N. Patriciello

On the Performance of Linux Container with Netmap/VALE for Networks Virtualization

IEEE International Conference On Networking (ICON), December 11-13, 2013, Singapore

M. Casoni, Carlo A. Grazia, P. Valente

A Flexible and Green Scheduler for providing QoS and High Throughput over Wireless Links

IEEE International Conference on Communications Systems and Technologies (ICCST), October 04-06, 2013, Hammamet, Tunisia, pp.218-225, ISBN: 978-9938-9511-6-5

E. Giachino, Carlo A. Grazia, C. Laneve, M. Lienhardt, P. Wong

DeadLock Analysis of Concurrent Objects - Theory and Practice

International Conference on Integrated Formal Methods (iFM), Springer, June 10-14, 2013, Turku, Finland

Technical Reports & Posters

M. Casoni, Carlo A. Grazia, P. Valente

HFS & TEMPEST: Technical Report

Italian Networking Workshop (INW'15), January 14-16, 2015, Cavalese, Italy

M. Casoni, Carlo A. Grazia, M. Klapez and N. Patriciello

A Validation Tool for PPDR Architectures based on ns-3

ACM Workshop on ns-3 (WNS3), 13-14 May 2015, Barcelona (Spain)