

Dr. Marco Gramaglia

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EDUCATION

- Ph.D. Telematic Engineering *summa cum laude*, University Carlos III of Madrid, 2012
- M.S. Telematic Engineering *summa cum laude*, University Carlos III of Madrid, 2009
- M.S. Computer Science Engineering *110/110*, Polytechnic University of Turin, 2008
- B.S. Computer Science Engineering, Polytechnic University of Turin, 2005

APPOINTMENTS

- 2017– University Carlos III of Madrid
Visiting Professor, Department of Telematic Engineering, 2022–
PostDoc Researcher, Department of Telematic Engineering 2017–2022
- 2015–17 Institute IMDEA Networks
PostDoc Researcher
- 2014–15 National Research Council of Italy
Research Fellow, Institute of Electronics, Computer and Telecommunication Engineering
- 2013–15 Istituto Superiore Mario Boella
Researcher
- 2008–12 Institute IMDEA Networks
Research Assistant

RESEARCH AREAS

5G and 6G Wireless and Mobile Networks.
Machine Learning and Deep Learning: Big Data, Privacy, and limited trust.
Cybersecurity.

PUBLICATIONS

Journal Articles

- 2023 Nikolaos Apostolakis, Marco Gramaglia, Livia Elena Chatzieftheriou, Tejas Subramanya, Henning Sanneck “ATHENA: Machine Learning and Reasoning for Radio Resources Scheduling in vRAN systems.” *IEEE Journal on Selected Areas in Communications*. doi:10.1109/JSAC.2023.3336155
- 2023 Miguel Ángel García-Martin, Marco Gramaglia, Pablo Serrano “Network Automation and Data Analytics in 3GPP 5G Systems.” *IEEE Network*. doi:10.1109/MNET.2023.3321524
- 2023 Patricia Callejo, Marco Gramaglia, Ruben Cuevas, Angel Cuevas “A deep dive into the accuracy of IP geolocation databases and its impact on online advertising.” *IEEE Transactions on Mobile Computing*. doi:10.1109/TMC.2022.3166785

- 2023 Mauro Allegretta, Giuseppe Siracusano, Roberto Gonzalez, Marco Gramaglia “Are crowd-sourced CTI datasets ready for supporting anti-cybercrime intelligence?” *Elsevier Computer Networks*. doi:10.1016/j.comnet.2023.109920
- 2023 Pablo Serrano, Marco Gramaglia, Francesco Mancini, Luca Chiaraviglio, Giuseppe Bianchi “Balloons in the Sky: Unveiling the Characteristics and Trade-offs of the Google Loon Service.” *IEEE Transactions on Mobile Computing*. doi:10.1109/TMC.2021.3135976
- 2023 Nikolaos Apostolakis, Livia Elena Chatzieftheriou, Dario Bega, Marco Gramaglia, Albert Banchs “Digital twins for next-generation mobile networks: Applications and solutions.” *IEEE Communications Magazine*. doi:10.1109/MCOM.001.2200854
- 2022 Marco Gramaglia, Marton Kajo, Christian Mannweiler, Ömer Bulakci, Qing Wei “A unified service-based capability exposure framework for closed-loop network automation.” *Transactions on Emerging Telecommunications Technologies*. doi:10.1002/ett.4598
- 2022 Nikolaos Apostolakis, Marco Gramaglia, Pablo Serrano “Design and Validation of an Open Source Cloud Native Mobile Network.” *IEEE Communications Magazine*. doi:10.1109/MCOM.003.2200195
- 2022 Jose A. Ayala-Romero, Andres Garcia-Saavedra, Marco Gramaglia, Xavier Costa-Perez, Albert Banchs, Juan J. Alcaraz “vrAIIn: Deep Learning based Orchestration for Computing and Radio Resources in vRANs.” *IEEE Transactions on Mobile Computing*. doi:10.1109/TMC.2020.3043100
- 2022 Juan Rendon, Julie Bradford, Konstantinos Konstantinou, Abhaya Sumanasena, Gerd Zimmermann, Marco Gramaglia “Cost assessment of elasticity for a 5G broadband network.” *Transactions on Emerging Telecommunications Technologies*. doi:10.1002/ett.4425
- 2021 Iñaki Ucar, Marco Gramaglia, Marco Fiore, Zbigniew Smoreda, Esteban Moro “News or social media? Socioeconomic divide of mobile service consumption.” *Journal of the Royal Society Interface*. doi:10.1098/rsif.2021.0350
- 2021 Marco Gramaglia, Marco Fiore, Angelo Furno, Razvan Stanica “GLOVE: towards privacy-preserving publishing of record-level-truthful mobile phone trajectories.” *ACM/IMS Transactions on Data Science*. doi:10.1088/1741-4326
- 2020 Dario Bega, Marco Gramaglia, Ramon Perez, Marco Fiore, Albert Banchs, Xavier Costa-Perez “AI-based autonomous control, management, and orchestration in 5G: from standards to algorithms.” *IEEE Network*. doi:10.1109/MNET.001.2000047
- 2020 Gines Garcia-Aviles, Carlos Donato, Marco Gramaglia, Pablo Serrano, Albert Banchs “ACHO: a framework for flexible re-orchestration of virtual network functions.” *Elsevier Computer Networks*. doi:10.1016/j.comnet.2020.107382
- 2020 Dario Bega, Marco Gramaglia, Marco Fiore, Xavier Costa-Perez “Network slicing meets artificial intelligence: an AI-based framework for slice management.” *IEEE Communications Magazine*. doi:10.1109/MCOM.001.1900653
- 2020 Dario Bega, Marco Gramaglia, Albert Banchs, Vincenzo Sciancalepore, Xavier Costa-Perez “A machine learning approach to 5G infrastructure market optimization.” *IEEE Transactions on Mobile Computing*. doi:10.1109/TMC.2019.2896950
- 2020 Dario Bega, Marco Gramaglia, Andres Garcia-Saavedra, Marco Fiore, Albert Banchs, Xavier Costa-Perez “DeepCog: optimizing resource provisioning in network slicing with AI-based capacity forecasting.” *IEEE Journal on Selected Areas in Communications*. doi:10.1109/JSAC.2019.2959245
- 2020 Gines Garcia-Aviles, Marco Gramaglia, Pablo Serrano, Francesco Gringoli, Sergio Fuente, Ignacio Labrador “Experimenting with open source tools to deploy a multi-service and multi-slice mobile network.” *Elsevier Computer Communications*. doi:10.1016/j.comcom.2019.11.003
- 2019 David Gutierrez-Estevez, Marco Gramaglia, Antonio De Domenico, Ghina Dandachi, Sina Khatibi, Dimitris Tsolkas, Irina Balan, Andres Garcia-Saavedra, Uri Elzur, Yue Wang “Artificial Intelligence for

- Elastic Management and Orchestration of 5G Networks.” *IEEE Wireless Communications*. doi:10.1109/MWC.2019.1800498
- 2019 Cristina Marquez, Marco Gramaglia, Marco Fiore, Albert Banchs, Xavier Costa-Perez “Resource sharing efficiency in network slicing.” *IEEE Transactions on Network and Service Management*. doi:10.1109/TNSM.2019.2923265
- 2019 Vincenzo Sciancalepore, Christian Mannweiler, Faquir Zarrar Yousaf, Pablo Serrano, Marco Gramaglia, Julie Bradford, Ignacio Labrador “A future-proof architecture for management and orchestration of multi-domain NextGen networks.” *IEEE Access*. doi:10.1109/ACCESS.2019.2923364
- 2019 Mehrdad Shariat, Ömer Bulakci, Antonio De Domenico, Christian Mannweiler, Marco Gramaglia, Qing Wei, Aravinthan Gopalasingham, Emmanouil Pateromichelakis, Fabrizio Moggio, Dimitris Tsolkas, Borislava Gajic, Marcos rates Crippa, Sina Khatibi “A flexible network architecture for 5G systems.” *Wireless Communications & Mobile Computing*. doi:10.1155/2019
- 2018 Gines Garcia-Aviles, Marco Gramaglia, Pablo Serrano, Albert Banchs “POSENS: a practical open source solution for end-to-end network slicing.” *IEEE Wireless Communications*. doi:10.1109/MWC.2018.1800050
- 2018 Dario Bega, Albert Banchs, Marco Gramaglia, Xavier Costa-Perez, Peter Rost “CARES: computation-aware scheduling in virtualized radio access networks.” *IEEE Transactions on Wireless Communications*. doi:10.1109/TWC.2018.2873324
- 2018 Pablo Serrano, Marco Gramaglia, Dario Bega, David Gutierrez-Estevez, Gines Garcia-Aviles, Albert Banchs “The path toward a cloud-aware mobile network protocol stack.” *Transactions on Emerging Telecommunications Technologies*. doi:10.1002/ett.3312
- 2017 Dario Bega, Marco Gramaglia, Carlos Jesus Bernardos, Albert Banchs, Xavier Costa-Perez “Toward the network of the future: from enabling technologies to 5G concepts.” *Transactions on Emerging Telecommunications Technologies*. doi:10.1002/ett.3205
- 2016 Marco Gramaglia, Oscar Trullols, Diala Naboulsi, Marco Fiore, Maria Calderon “Mobility and connectivity in highway vehicular networks: a case study in Madrid.” *Elsevier Computer Communications*. doi:10.1016/j.comcom.2015.10.014
- 2015 Luca Bedogni, Marco Gramaglia, Andrea Vesco, Marco Fiore, Jerome Harri, Francesco Ferrero “The Bologna ringway dataset: improving road network conversion in SUMO and validating urban mobility via navigations services.” *IEEE Transactions on Vehicular Technology*. doi:10.1109/TVT.2015.2475608
- 2014 Marco Gramaglia, Marco Fiore, Maria Calderon “Measurement-Based Modeling of Interarrivals for the Simulation of Highway Vehicular Networks.” *IEEE Communications Letters*. doi:10.1109/LCOMM.2014.2363114
- 2014 M. Isabel Sanchez, Marco Gramaglia, Carlos Jesus Bernardos, Antonio de la Oliva, Maria Calderon “On the implementation, deployment and evaluation of a networking protocol for VANETs: The VARON case.” *Elsevier Ad Hoc Networks*. doi:10.1016/j.adhoc.2014.02.001
- 2014 Marco Gramaglia, Carlos Jesus Bernardos, Maria Calderon “ABEONA monitored traffic: VANET-assisted cooperative traffic congestion forecasting.” *IEEE Vehicular Technology Magazine*. doi:10.1109/MVT.2014.2312238
- 2013 Marco Gramaglia, Carlos Jesus Bernardos, Maria Calderon “Virtual Induction Loops Based on Cooperative Vehicular Communications.” *MDPI Sensors*. doi:10.3390/s130201467
- 2012 Marco Gramaglia, Manuel Urueña, Isaias Martinez-Yelmo “Off-line incentive mechanism for long-term P2P backup storage.” *Elsevier Computer Communications*. doi:10.1016/j.comcom.2012.04.017
- 2012 Marco Gramaglia, Carlos Jesus Bernardos, Ignacio Soto, Maria Calderon, Roberto Baldessari “IPv6 address autoconfiguration in geonetworking-enabled VANETs: characterization and evaluation of the ETSI solution.” *EURASIP Journal on Wireless Communications and Networking*.

doi:10.1186/1687-1499-2012-19

- 2011 Marco Gramaglia, Carlos Jesus Bernardos, Maria Calderon “Seamless internet 3G and opportunistic WLAN vehicular connectivity.” *EURASIP Journal on Wireless Communications and Networking*. doi:10.1186/1687-1499-2011-183
- 2011 Marco Gramaglia, Ignacio Soto, Carlos Jesus Bernardos, Maria Calderon “Overhearing-Assisted Optimization of Address Autoconfiguration in Position-Aware VANETs.” *IEEE Transactions on Vehicular Technology*. doi:10.1109/TVT.2011.2158597

Book Chapters

- 2023 Ömer Bulakçı, Xi Li, Marco Gramaglia, Anastasius Gavras, Mikko Uusitalo, Patrick Rugeland, Mauro Boldi “Towards Sustainable and Trustworthy 6G: Challenges, Enablers, and Architectural Design.” *Boston-Delft: now publishers*. doi:10.1561/9781638282396
- 2023 Ömer Bulakçı, Mikko Uusitalo, Patrik Rugeland, Marco Gramaglia, Xi Li, Mauro Boldi, Anastasius Gavras “Introduction.” *Towards Sustainable and Trustworthy 6G: Challenges, Enablers, and Architectural Design*. doi:10.1561/9781638282396.ch1
- 2023 Marco Gramaglia, Xi Li, Gines Garcia-Aviles “Towards natively intelligent networks.” *Towards Sustainable and Trustworthy 6G: Challenges, Enablers, and Architectural Design*. doi:10.1561/9781638282396.ch5
- 2018 Marco Gramaglia, Alexandros Kaloxylos, Panagiotis Spapis, Xavier Costa-Perez, Luis Miguel Contreras, Riccardo Trivisonno, Gerd Zimmermann, Antonio de la Oliva, Peter Rost, Patrick Marsch “E2E Architecture.” *5G System Design: Architectural and Functional Considerations and Long Term Research*. doi:10.1002/9781119425144.ch5
- 2017 Marco Gramaglia, Marco Fiore, Maria Calderon, Oscar Trullols, Diala Naboulsi “Highway Road Traffic Modeling for ITS Simulation.” *Networking Simulation for Intelligent Transportation Systems: High Mobile Wireless Nodes*. doi:10.1002/9781119407447.ch8

Conference Proceedings

- 2023 Mattia Milani, Dario Bega, Marco Gramaglia, Christian Mannweiler “Optimizing Predictive Analytics in 5G Networks Through Zero-Trust Operator-Customer Cooperation.” *2023 IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN)*. doi:10.1109/NFV-SDN59219.2023.10329622
- 2023 Livia Elena Chatzieleftheriou, Marco Gramaglia, Miguel Camelo, Andres Garcia-Saavedra, Evangelos Kosmatos, Michele Gucciardo, Paola Soto, George Iosifidis, Lidia Fuentes, Andra Lutu, Gabriele Baldoni, Marco Fiore “Orchestration Procedures for the Network Intelligence Stratum in 6G Networks.” *2023 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit)*. doi:10.1109/EuCNC/6GSummit58263.2023.10188297
- 2023 Mauro Allegretta, Giuseppe Siracusano, Roberto Gonzalez, Marco Gramaglia “Using CTI Data to Understand Real World Cyberattacks.” *18th Wireless On-Demand Network Systems and Services Conference (WONS 2023)*. doi:10.23919/WONS57325.2023.10061921
- 2022 Miguel Camelo, Marco Gramaglia, Paola Soto, Lidia Fuentes, Joaquín Ballesteros, Antonio Bazco-Nogueras, Gines Garcia-Aviles, Steven Latré, Andres Garcia-Saavedra, Marco Fiore “DAEMON: A network intelligence plane for 6G networks.” *2022 IEEE Global Communications Conference*. doi:10.1109/GCwksksh56602.2022.10008662
- 2022 Leonardo Lo schiavo, Marco Fiore, Marco Gramaglia, Albert Banchs, Xavier Costa-Perez “Forecasting for Network Management with Joint Statistical Modelling and Machine Learning.” *23rd IEEE International Symposium on A World of Wireless, Mobile and Multimedia Networks (WoWMoM), 2022*. doi:10.1109/WoWMoM54355.2022.00028

- 2022 Marco Gramaglia, Miguel Camelo, Lidia Fuentes, Joaquín Ballesteros, Gabriele Baldoni, Luca Cominardi, Andres Garcia-Saavedra, Marco Fiore “Network Intelligence for Virtualized RAN Orchestration: The DAEMON Approach.” *EuCNC & 6G Summit*. doi:10.1109/EuCNC/6GSummit54941.2022.9815816
- 2022 Albert Banchs, Marco Fiore, Andres Garcia-Saavedra, Marco Gramaglia “Network intelligence in 6G: challenges and opportunities.” *MobiArch '21: 16th ACM Workshop on Mobility in the Evolving Internet Architecture*. doi:10.1145/3477091.3482761
- 2022 Gines Garcia-Aviles, Andres Garcia-Saavedra, Marco Gramaglia, Xavier Costa-Perez, Pablo Serrano, Albert Banchs “Nuberu: Reliable RAN Virtualization in Shared Platforms.” *ACM MobiCom 2021: The 27th Annual International Conference On Mobile Computing And Networking*. 10.1145/3447993.3483266
- 2022 Miguel Camelo, Marco Gramaglia, Marco Fiore, Lidia Fuentes, Paola Soto, Nina Slamnik-kriještorac, Joaquín Ballesteros, Chia-yu Chang, Gabriele Baldoni, Johann m. Marquez-barja, Peter Hellinckx, Steven Latré “Requirements and Specifications for the Orchestration of Network Intelligence in 6G.” *2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)*. doi:10.1109/CCNC49033.2022.9700729
- 2021 Vittorio Prodomo, Roberto Gonzalez, Marco Gramaglia “Trading accuracy for privacy in machine learning tasks: an empirical analysis.” *IEEE Conference on Communications and Network Security (CNS 2021)*. doi:10.1109/CNS53000.2021.9729036
- 2020 Luca Vignaroli, Marco Gramaglia, Manuel Fuentes, Antonino Casella, Roman Odarchenko, Lorenzo Natale, Baruch Altman, Francesco D’Andria “The touristic sector in the 5G technology era: the 5G-TOURS project approach.” *IEEE GLOBECOM 2020 - Global Communications Conference. Communications for Human and Machine Intelligence*. doi:10.1109/GCWkshps50303.2020.9367418
- 2020 Marco Gramaglia, Vincenzo Sciancalepore, Ramon Perez, Francisco Javier Fernandez-Maestro, Pablo Serrano, Albert Banchs “Experimenting with SRv6: a tunneling protocol supporting network slicing in 5G and beyond.” *IEEE 25th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (2020 CAMAD)*. doi:10.1109/CAMAD50429.2020.9209260
- 2020 Dario Bega, Marco Gramaglia, Marco Fiore, Albert Banchs, Xavier Costa-Perez “AZTEC: anticipatory capacity allocation for zero-touch network slicing.” *39th IEEE Conference on Computer Communications, INFOCOM 2020 (Virtual conference)*. doi:10.1109/INFOCOM41043.2020.9155299
- 2020 Marco Gramaglia, Pablo Serrano, Albert Banchs, Gines Garcia-Aviles, Andres Garcia-Saavedra, Ramon Perez “The case for serverless mobile networking.” *IFIP Networking Conference 2020*.
- 2020 Cristina Marquez, Marco Gramaglia, Marco Fiore, Albert Banchs, Zbigniew Smoreda “Identifying Common Periodicities in Mobile Service Demands with Spectral Analysis.” *2020 Mediterranean Communication and Computer Networking Conference (MedComNet)*. doi:10.1109/MedComNet49392.2020.9191477
- 2019 Jose A. Ayala-Romero, Andres Garcia-Saavedra, Marco Gramaglia, Xavier Costa-Perez, Albert Banchs, Juan J. Alcaraz “vrAIn: a deep learning approach tailoring computing and radio resources in virtualized RANs.” *The 25th Annual International Conference on Mobile Computing and Networking (MobiCom '19)*. doi:10.1145/3300061.3345431
- 2019 Iñaki Ucar, Marco Gramaglia, Marco Fiore, Zbigniew Smoreda, Esteban Moro “Netflix or Youtube? Regional income patterns of mobile service consumption.” *NetMob 2019*.
- 2019 Dario Bega, Marco Gramaglia, Marco Fiore, Albert Banchs, Xavier Costa-Perez “DeepCog: Cognitive Network Management in Sliced 5G Networks with Deep Learning.” *2019 IEEE International Conference on Computer Communications (IEEE INFOCOM 2019)*. doi:10.1109/INFOCOM.2019.8737488
- 2019 Dario Bega, Marco Gramaglia, Marco Fiore, Albert Banchs, Xavier Costa-Perez “alfa-OMC: cost-aware deep learning for mobile network resource orchestration.” *The 2nd International Workshop on Network Intelligence (NI 2019): Machine Learning for Networking (part of 2019 IEEE International Conference on*

- Computer Communications (IEEE INFOCOM 2019)*). doi:10.1109/INFCOMW.2019.8845178
- 2018 Marco Gramaglia, Ignacio Labrador, Francesco Gringoli, Gines Garcia-Aviles Pablo Serrano “Design and validation of a multi-service 5G network with QoE-aware orchestration.” *WiNTECH '18: 12th International Workshop on Wireless Network Testbeds, Experimental Evaluation & Characterization*. doi:10.1145/3267204.3267216
- 2018 David Gutierrez-Estevez, Nicola Di Pietro, Antonio De Domenico, Marco Gramaglia, Uri Elzur, Yue Wang “5G-MoNArch use case for ETSI ENI: elastic resource management and orchestration.” *2018 IEEE Conference on Standards for Communications and Networking (CSCN)*. doi:10.1109/CSCN.2018.8581789
- 2018 Ömer Bulakci, Qing Wei, Aravinthan Gopalasingham, Antonio De Domenico, Mehrdad Shariat, Emmanouil Pateromichelakis, Fabrizio Moggio, Dimitris Tsolkas, Christian Mannweiler, Marco Gramaglia, Stavros Papadopoulos, Marcos Rates Crippa, Dimitrios Tzovaras “Identifying 5G system enhancements: enabling technologies for multi-service networks.” *2018 IEEE Conference on Standards for Communications and Networking (CSCN)*. doi:10.1109/CSCN.2018.8581785
- 2018 Cristina Marquez, Marco Gramaglia, Marco Fiore, Albert Banchs, Xavier Costa-Perez “How should I slice my network? A multi-service empirical evaluation of resource sharing efficiency.” *24th Annual International Conference on Mobile Computing and Networking (MobiCom '18)*. doi:10.1145/3241539.3241567
- 2018 Ömer Bulakci, Qing Wei, Christian Mannweiler, Marco Gramaglia, David Gutierrez-Estevez, Mehrdad Shariat, Paul Arnold, Nicola Di Pietro, Ghina Dandachi, Dimitris Tsolkas “Overall 5G-MoNArch architecture and implications for resource elasticity.” *2018 European Conference on Networks and Communications (EuCNC)*.
- 2018 Pablo Serrano, Marco Gramaglia, Dario Bega, David Gutierrez-Estevez, Gines Garcia-Aviles, Albert Banchs “On the benefits of bringing cloud-awareness to network virtual functions.” *European Conference on Networks and Communications (EuCNC 2018)*.
- 2018 Anastasios Zafeiropoulos, Panagiotis Gouvas, Eleni Fotopoulou, George Tsiolis, Thanos Xirofotos, Jose Bonnet, Gino Carrozzo, Stamatia Rizou, Anastasius Gavras, Maria joao Barros, Xavier Costa-Perez, Athul Prasad, Marco Gramaglia, Anna Tzanakaki, Dimitra Simeonidou, John Cosmas, Mikael Fallgren, Raul Muñoz, Ricard Vilalta “Enabling Vertical Industries Adoption of 5G Technologies: a Cartography of evolving solutions.” *European Conference on Networks and Communications (EuCNC 2018)*. doi:10.1109/EuCNC.2018.8442656
- 2018 Gines Garcia-Aviles, Marco Gramaglia, Pablo Serrano, Marc Portoles, Albert Banchs, Fabio Maino “SEMPER: a stateless traffic engineering solution for WAN based on MP-TCP.” *2018 IEEE International Conference on Communications (ICC)*. doi:10.1109/ICC.2018.8422991
- 2018 David Gutierrez-Estevez, Marco Gramaglia, Antonio De Domenico, Nicola Di Pietro, Sina Khatibi, Kunjan Shah, Dimitris Tsolkas, Paul Arnold, Pablo Serrano “The path towards resource elasticity for 5G network architecture.” *IEEE Wireless Communications and Networking Conference Workshops (WCNCW 2018)*. doi:10.1109/WCNCW.2018.8369027
- 2017 Cristina Marquez, Marco Gramaglia, Marco Fiore, Albert Banchs, Cezary Ziemlicki, Zbigniew Smoreda “Not all Apps are created equal: analysis of spatiotemporal heterogeneity in nationwide mobile service usage.” *13th International Conference on emerging Networking EXperiments and Technologies (CoNEXT '17)*. doi:10.1145/3143361.3143369
- 2017 Alejandro Cuadrado, Marco Fiore, Claudio Casetti, Marco Gramaglia, Maria Calderon “Bidirectional highway traffic for network simulation.” *2017 IEEE Vehicular Networking Conference (VNC)*. doi:10.1109/VNC.2017.8275628
- 2017 Federico Montori, Marco Gramaglia, Luca Bedogni, Marco Fiore, Farid Sheikh, Luciano Bononi, Andrea Vesco “Automotive Communications in LTE: A Simulation-Based Performance Study.” *2017*

- IEEE 86th Vehicular Technology Conference (VTC-Fall)*. doi:10.1109/VTCFall.2017.8288297
- 2017 Faqir Zarrar Yousaf, Marco Gramaglia, Vasilis Friderikos, Borislava Gajic, Dirk von Hugo, Bessem Sayadi, Vincenzo Sciancalepore, Marcos Rates Crippa “Network slicing with flexible mobility and QoS/QoE support for 5G networks.” *2017 IEEE International Conference on Communications Workshops (ICC Workshops)*. doi:10.1109/ICCW.2017.7962821
- 2017 Marco Gramaglia, Marco Fiore, Alberto Tarable, Albert Banchs “Preserving mobile subscriber privacy in open datasets of spatiotemporal trajectories.” *IEEE International Conference on Computer Communications (IEEE INFOCOM 2017)*. doi:10.1109/INFOCOM.2017.8056979
- 2017 Vincenzo Sciancalepore, Konstantinos Samdanis, Xavier Costa-Perez, Dario Bega, Marco Gramaglia, Albert Banchs “Mobile traffic forecasting for maximizing 5G network slicing resource utilization.” *IEEE International Conference on Computer Communications (IEEE INFOCOM 2017)*. doi:10.1109/INFOCOM.2017.8057230
- 2017 Dario Bega, Marco Gramaglia, Albert Banchs, Vincenzo Sciancalepore, Konstantinos Samdanis, Xavier Costa-Perez “Optimising 5G infrastructure markets: the business of network slicing.” *IEEE Conference on Computer Communications, INFOCOM 2017*. doi:10.1109/INFOCOM.2017.8057045
- 2016 Bessem Sayadi, Marco Gramaglia, Vasilis Friderikos, Dirk von Hugo, Paul Arnold, Marie-Line Alberi-Morel, Miguel Angel Puente, Vincenzo Sciancalepore, Ignacio Digon, Marcos Rates Crippa “SDN for 5G Mobile Networks: NORMA perspective.” *11th EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2016)*. doi:10.1007/978-3-319-40352-6_61
- 2016 Marco Gramaglia, Ignacio Digon, Vasilis Friderikos, Dirk von Hugo, Christian Mannweiler, Miguel Angel Puente, Konstantinos Samdanis, Bessem Sayadi “Flexible connectivity and QoE/QoS management for 5G networks: the 5G NORMA view.” *2016 IEEE International Conference on Communications Workshops (ICC)*. doi:10.1109/ICCW.2016.7503816
- 2015 Christian Glacet, Marco Fiore, Marco Gramaglia “Temporal connectivity of vehicular networks: the power of store-carry-and-forward.” *2015 IEEE Vehicular Networking Conference (VNC)*. doi:10.1109/VNC.2015.7385546
- 2015 Marco Gramaglia, Marco Fiore “On the level of detail of synthetic highway traffic necessary to vehicular networking studies.” *2015 IEEE Vehicular Networking Conference (VNC)*. doi:10.1109/VNC.2015.7385541
- 2015 Marco Gramaglia, Marco Fiore “Hiding mobile traffic fingerprints with GLOVE.” *11th ACM Conference on Emerging Networking Experiments and Technologies ACM (CoNEXT 2015)*. doi:10.1145/2716281.2836111
- 2014 Marco Gramaglia, Oscar Trullols, Diala Naboulsi, Marco Fiore, Maria Calderon “Vehicular networks on two Madrid highways.” *2014 Eleventh Annual IEEE International Conference on Sensing, Communication, and Networking (SECON)*. doi:10.1109/SAHCN.2014.6990380
- 2011 Marco Gramaglia, Carlos Jesus Bernardos, Maria Calderon, Antonio de la Oliva “Performance evaluation of a tree-based routing and address autoconfiguration for vehicle-to-Internet communications.” *11th International Conference on ITS Telecommunications (ITST 2011)*. doi:10.1109/ITST.2011.6060101
- 2011 Marco Gramaglia, Pablo Serrano, José Alberto Hernández, Maria Calderon, Carlos Jesus Bernardos “New Insights from the Analysis of Free Flow Vehicular Traffic in Highways.” *12th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2011)*. doi:10.1109/WoWMoM.2011.5986384
- 2011 Marco Gramaglia, Maria Calderon, Carlos Jesus Bernardos “TREBOL: Tree-Based Routing and Address Autoconfiguration for Vehicle-to-Internet Communications.” *2011 IEEE 73rd Vehicular Technology Conference: VTC2011-Spring*. doi:10.1109/VETECS.2011.5956233

Demos and Posters

- 2022 Gines Garcia-Aviles, Andres Garcia-Saavedra, Marco Gramaglia, Xavier Costa-Perez, Pablo Serrano, Albert Banchs “Demo: Nuberu - A Reliable DU Design Suitable for Virtualization Platforms.” *The 27th Annual International Conference On Mobile Computing And Networking (MobiCom '21)*. doi:10.1145/3447993.3511173
- 2019 Jose A. Ayala-Romero, Andres Garcia-Saavedra, Marco Gramaglia, Xavier Costa-Perez, Albert Banchs, Juan J. Alcaraz “Demo: vrAI in proof-of-concept: a deep learning approach for virtualized RAN resource control.” *The 25th Annual International Conference on Mobile Computing and Networking (MobiCom '19)*. doi:10.1145/3300061.3343370

Patents

- 2021 Roberto Gonzalez, Vittorio Prodomo, Marco Gramaglia *Privacy preserving joint training of machine learning models*. United States patent US20220300853A1.
- 2020 Andres Garcia-Saavedra, Xavier Costa-Perez, Marco Gramaglia, Albert Banchs *Virtualized radio access point, vrap, and method of operating the same*. Worldwide patent WO2022096140A1.
- 2018 Vincenzo Sciancalepore, Xavier Costa-Perez, Albert Banchs, Marco Gramaglia *Method and system for network slice allocation*. United States patent US20180317133A1, European patent EP3396997A1.
- 2016 Marco Fiore, Alberto Tarable, Marco Gramaglia *Method For The Merger Of Space-temporal Trajectories*. Italian Patent IT201600072283A1.

Theses

- 2012 Marco Gramaglia “VANET-Based optimization of infotainment and traffic efficiency vehicular services”. Ph.D. Thesis. Advisors: Maria Calderon and Carlos Jesus Bernardos. handle:10016/16176
- 2009 Marco Gramaglia “Speeding IPv6 Address Autoconfiguration for VANETs through Caching”. M.Sc Thesis. Advisors: Maria Calderon and Carlos Jesus Bernardos. handle:20.500.12761/1044
- 2008 Marco Gramaglia “Analysis and implementation of routing algorithms for MAC-PHY 802.15.4 based ad-hoc networks”. M.Sc Thesis.

INVITED TALKS

- 2019 “Elastic Network Operation: Rationale, Challenges and Solutions.” 5G AURA PhD School. York, UK. Apr 2.
- 2016 “Software-Defined Mobile Network Control and Orchestration.” 5G Norma Summer School. London, UK. Jun 22.

CONFERENCE ACTIVITY

Chairing

- 2023 “MobiCom 2023 The 29th Annual International Conference On Mobile Computing And Networking”. Local chair. Madrid, Spain. 2-6 Oct.
- 2022 “2nd Workshop On Architectural Evolution Toward 6g Networks (6GARCH). Co-located with IEEE Global Communications Conference”. Workshop Organizer. Rio de Janeiro, Brazil. 8 Dec.
- 2021 “MobileServerless '21, co-located with ACM MobiSys 2021”. Workshop Organizer. Virtual. 25 Jun.

Invited Panelist

- 2017 “Special Session 2: 6G Architecture – European View.” Panelist with Ömer Bulakci, Xi Li, Anastasius Gavras, Mikko Uuistalo, Patrik Rugeland, Mauro Boldi. 2023 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit). Gothenburg, Sweden. Jun 8.

TPC Membership

- 2023 IEEE CCNC, IEEE WCNC, IEEE Starless, IEEE ICC, EuCNC, IEEE SECON, IEEE CSCN, IEEE Globecom, IEEE ANTS.
- 2022 IEEE CCNC, IEEE ICC, IEEE WCNC, IEEE Starless, EuCNC, IFIP Networking, IEEE SECON, IEEE CSCN, IEEE Globecom, IEEE ANTS.
- 2021 IEEE ICC MWN, IEEE 5G-WF, IEEE ANTS 21, IEEE Globecom MWN, IEEE CSCN, EuCNC.
- 2020 ACM Mobicom (Posters), IEEE ISWCS, IEEE Globecom MWN, EuCNC, IEEE INFOCOM 2020 NI Workshop, IEEE WCNC, IEEE SmartSys, IEEE ICC IoT Track
- 2019 EuCNC RAS, IEEE Globecom MWN, IEEE WCNC, Wireless Days, ACM Big-DAMA, IEEE VTC
- 2018 IEEE SmartVehicles, EuCNC, IEEE CSCN, IEEE Globecom MWN, IEEE WCNC, IEEE VTC, ACM WiNTECH
- 2017 IEEE SmartVehicles, EuCNC, IEEE ANTS, IEEE VTC
- 2016 IEEE CSCN, IEEE SmartVehicles, IEEE VTC

GRANTS AND AWARDS

Awards

- 2023 Best Paper Award, 2023 IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN).
- 2021 Communication Systems Integration and Modelling (CSIM) Best Conference Paper Award.
- 2019 Best Runner-up Demo, The 25th Annual International Conference on Mobile Computing and Networking (MobiCom'19).

Grants

- 2009 FPU grant from the Spanish Ministry of Science and Innovation.

COURSES TAUGHT

University Carlos III of Madrid

- 2015– Access networks and shared media.
- 2017– Core Networks in 5G.
- 2021– Multimedia Networks.
- 2019 Internet Measurements.
- 2020 Mobile and Wireless networks.
- 2023 Communication Network and Services.

Federico II University of Naples

- 2020-22 5G Connectivity - 5G Academy.

SERVICE

Journal Editorship

2021 Springer Journal of Network and Systems Management (SI on Network Management in Beyond 5G Systems).

Peer Reviewer

Elsevier Computer Communications

Elsevier Computer Networks

IEEE Communication Letters

IEEE Communications Magazine

IEEE INFOCOM

IEEE Transactions on Intelligent Transportation Systems

IEEE Transactions on Mobile Computing

IEEE Transactions on Networking

IEEE Transactions on Network and Service Management

IEEE Transactions on Network Science and Engineering

IEEE Transactions on Vehicular Technology

IEEE Transactions on Wireless Communications

IEEE/ACM Transactions on Networking

Plos One

COMPETITIVE RESEARCH PROJECTS

Principal Investigator

2023–25 TrialsNet (TRials supported by Smart Networks beyond 5G). doi:10.3030/101095871

2021–24 DAEMON (Network intelligence for aDAptive and sElf-Learning MObile Networks). doi:10.3030/101017109

Work Package Leader

2015–17 5G NORMA (5G NOvel Radio Multiservice adaptive network Architecture). doi:10.3030/671584

Researcher

2019–22 5G-TOURS (SmarT mObility, media and e-health for toURists and citizenS). doi:10.3030/856950

2017–19 5G-MoNArch (5G Mobile Network Architecture for diverse services, use cases, and applications in 5G and beyond). doi:10.3030/761445

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