Dr. Marco Gramaglia

About

I am a Post-Doc researcher at **Universidad Carlos III de Madrid**, **Department of Telematics Engineering**. I am also an Honorary Professor in the same university. My research interests include Vehicular Networks, Wireless Networks, 5G Networks, Mobile Networks, and Big Data.

Academic and Professional Background

Mar 2017   **Post-Doc researcher** - **Universidad Carlos III de Madrid**, **Department of Telematics Engineering** Leganes, Spain.

Sep 2015   **Post-Doc researcher** - **Institute IMDEA Networks**, Leganes, Spain.

Sep 2015   **Honorary professor** - **Universidad Carlos III de Madrid**, Leganes, Spain.

Aug 2014   **Research fellow** - **IEIIT-CNR**, Turin, Italy.

Mar 2013   **Researcher** - **Istituto Superiore Mario Boella**, Turin, Italy.

Sep 2012   **PhD title** in Telematics Engineering **Universidad Carlos III de Madrid**, Leganes, Spain. Score: *Summa cum laude*. Advisors: **Prof. Maria Calderon Pastor** and **Prof. Carlos J. Bernardos Cano**

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

Sep 2009   **MSc title** in Telematics Engineering **Universidad Carlos III de Madrid**, Leganes, Spain. Score: *Summa cum laude*

Oct 2008   **PhD candidate** - **Institute IMDEA Networks**, Leganes, Spain.

Apr 2008   **MSc Title** in Computer Science Engineering **Politecnico di Torino**, Turin, Italy. Score: 110/110

Teaching experience

2017-2018   **Access networks and shared media** - **Universidad Carlos III de Madrid**, Spain. (in English and Spanish)

Core Networks in 5G (Coord.) - **Universidad Carlos III de Madrid**, Spain (English Only).

2016-2017   **Access networks and shared media** - **Universidad Carlos III de Madrid**, Spain. (in English and Spanish)

2015-2016   **Access networks and shared media** - **Universidad Carlos III de Madrid**, Spain. (in English and Spanish)

2009-2010   **Network Infrastructure** - ERASMUS MUNDUS Network and E-Business Centred Computing (NeBCC) MSc Programme, **Universidad Carlos III de Madrid**, Spain. (in English)

Projects and Grants

5GMoNArch   *Deputy Technical Manager*, H2020 program, 2017-2019.

DTL   *Grantee*, 2017-2018.

5GNORMA   *Work package 5 leader*, H2020 program, 2015-2017.

GAIN   *Participant*, FP7 program, 2012-2014.

MEDIEVAL   *Participant*, FP7 program, 2010-2013.

CARMEN   *Participant*, FP7 program, 2008-2010.

GEONET   *Participant*, FP7 program, 2008-2010.

Publications

Conferences / Workshops

1. D. Bega, M. Gramaglia, M. Fiore, A. Banchs and X. Costa-Perez **DeepCog: Cognitive Network Management in Sliced 5G Networks with Deep Learning** in *IEEE INFOCOM 19* (Accepted). 2019.

2. C. Marquez, M. Gramaglia, M. Fiore, A. Banchs, and X. Costa-Perez **How Should I Slice My Network? A Multi-Service Empirical Evaluation of Resource Sharing Efficiency** in *ACM MobiCom 18*. 2018

3. M. Gramaglia, I. Labrador Pavon, F. Gringoli, G. Garcia-Aviles, and P. Serrano **Design and Validation of a Multi-service 5G Network with QoE-aware Orchestration** in *ACM WiNTECH 18*. 2018.

4. A. Zafeiropoulos, P. Gouvas, E. Fotopoulou, G. Tsiolis, T. Xirofotos, J. Bonnet, G. Carrozzo, S. Rizou, A. Gavras, M. Barros, X. Costa-Perez, A. Prasad, M. Gramaglia, A. Tzanakaki, D. Simeonidou, J. Cosmas, M. Fallgren, R. Muñoz, and R. Vilalta **Enabling Vertical Industries Adoption of 5G Technologies: A Cartography of Evolving Solutions** In: *2018 European Conference on Networks and Communications (EuCNC)*. 2018

5. G. Garcia-Aviles, M. Gramaglia, P. Serrano, M. Portoles, A. Banchs, and F. Maino **SEMPER: A Stateless Traffic Engineering Solution for WAN Based on MP-TCP** In: *IEEE International Conference on Communications (ICC)*, 2018.

6. D. Gutierrez-Estevez, M. Gramaglia, A. Domenico, N. Pietro, S. Khatibi, K. Shah, D. Tsolkas, P. Arnold, and P. Serrano **The path towards resource elasticity for 5G network architecture** In: *2018 IEEE Wireless Communications and Networking Conference Workshops (WCNCW)*. 2018.

7. A. Torre, M. Fiore, C. Casetti, M. Gramaglia, and M. Calderon **Bidirectional highway traffic for network simulation** In: *2017 IEEE Vehicular Networking Conference (VNC)*. 2017.

8. C. Marquez, M. Gramaglia, M. Fiore, A. Banchs, C. Ziemlicki, and Z. Smoreda **Not All Apps Are Created Equal: Analysis of Spatiotemporal Heterogeneity in Nationwide Mobile Service Usage** In: *ACM CoNEXT*. 2017.

9. F. Z. Yousaf, M. Gramaglia, V. Friderikos, B. Gajic, D, von Hugo, B. Sayadi, V. Sciancalepore, and M. Crippa **Network Slicing with Flexible Mobility and QoS/QoE Support for 5G Networks** In: *IEEE International Conference on Communications (ICC) Workshop 5GArch*. 2017.

10. M. Gramaglia, M. Fiore, A. Tarable, and A. Banchs **Preserving Mobile Subscriber Privacy in Open Datasets of Spatiotemporal Trajectories** In: *IEEE INFOCOM*, 2017.

11. D. Bega, M. Gramaglia, A.Banchs, V. Sciancalepore, K. Samdanis, and X. Costa-Perez **Optimising 5G infrastructure markets: The Business of Network Slicing** In: *IEEE INFOCOM*, 2017.

12. V. Sciancalepore, K. Samdanis, X. Costa-Perez, D. Bega, M. Gramaglia, and A.Banchs **Mobile Traffic Forecasting for Maximizing 5G Network Slicing Resource Utilization** In: *IEEE INFOCOM* , 2017.

13. B. Sayadi, M. Gramaglia, V. Friderikos, D. von Hugo, P. Arnold, M. Alberi-Morel, M.A. Puente, V. Sciancalepore, I. Digon, and M. Crippa **SDN for 5G Mobile Networks: NORMA Perspective**. In: *11th CROWNCOM International Conference*. 2016.

14. M. Gramaglia, I. Digon, V. Friderikos, D. von Hugo, C. Mannweiler, M.A. Puente, K. Samdanis, and B. Sayadi **Flexible connectivity and QoE/QoS management for 5G Networks: The 5G NORMA view** In: *IEEE International Conference on Communications (ICC) Workshop 5GArch*. 2016.

15. C. Glacet, M. Fiore, and M. Gramaglia **Temporal Connectivity of Vehicular Networks: The Power of Store-Carry-and-Forward** In: *IEEE Vehicular Networking Conference (VNC)*. 2015.

16. M. Gramaglia and M. Fiore **On the Level of Detail of Synthetic Highway Traffic Necessary to Vehicular Networking Studies** In: *IEEE Vehicular Networking Conference (VNC)*. 2015.

17. M. Gramaglia and M. Fiore **Hiding Mobile Traffic Fingerprints with GLOVE** In: *ACM CoNEXT*. 2015.

18. M. Gramaglia and M. Fiore **On the anonymizability of mobile traffic datasets** In: *NetMob book of abstracts*. 2015

19. M. Gramaglia, O. Trullols-Cruces, D. Naboulsi, M. Fiore, and M. Calderon. **Vehicular Networks on Two Madrid Highways**. In: *11th IEEE International Conference on Sensing, Communication, and Networking (SECON)*. 2014.

20. M. Gramaglia, C.J. Bernardos, M. Calderon, and A. de la Oliva. **Performance evaluation of a tree-based routing and address autoconfiguration for vehicle-to-Internet communications**. In: *11th International Conference on ITS Telecommunications (ITST)*. 2011.

21. M. Gramaglia, P. Serrano, J.A. Hernández, M. Calderon, and C.J. Bernardos. **New insights from the analysis of free flow vehicular traffic in highways**. In: *IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*. 2011.

22. M. Gramaglia, M. Calderon, and C.J. Bernardos. **TREBOL: Tree-Based Routing and Address Autoconfiguration for Vehicle-to-Internet Communications**. In: *IEEE 73rd Vehicular Technology Conference (VTCSpring)*. 2011.

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1. D. Bega, A. Banchs, M. Gramaglia, X. Costa-Perez and P. Rost **CARES: Computation-aware Scheduling in Virtualized Radio Access Networks** in *IEEE Transactions on Wireless Communications*. 2018 (IF 5.888)

2. G. Garcia-Aviles, M. Gramaglia, P. Serrano, and A. Banchs **POSENS: a practical open-source solution for end-to-end network slicing** in *IEEE Wireless Communications (Special Issue: 5G Testing and Field Trials)*. 2018 (IF 9.202).

3. P. Serrano, M. Gramaglia, D. Bega, D. Gutierrez-Estevez, G. Garcia-Aviles, and A. Banchs **The path toward a cloud-aware mobile network protocol stack** in *Wiley Transactions on Emerging Telecommunications Technologies*. 2018.

4. D. Bega, M. Gramaglia, C. J. Bernardos Cano, A. Banchs, and X. Costa-Perez **Toward the network of the future: From enabling technologies to 5G concepts** *Wiley Transactions on Emerging Telecommunications Technologies*. 2017 (IF 1.610).

5. M. Gramaglia, O. Trullols-Cruces, D. Naboulsi, M. Fiore, and M. Calderon **Mobility and connectivity in highway vehicular networks: A case study in Madrid**. *Elsevier Computer Communications*. 2015.

6. L. Bedogni, M. Gramaglia, A. Vesco, M. Fiore, J. Härri, and F. Ferrero **The Bologna ringway dataset: improving road network conversion in SUMO and validating urban mobility via navigation services**. *IEEE Transactions on Vehicular Technology*. 2015.

7. M. Gramaglia, M. Fiore, and M. Calderon **Measurement-based modeling of inter-arrivals for the simulation of highway vehicular networks**. *IEEE Communications Letters*. 2014.

8. M. Gramaglia, M. Calderon, and C.J. Bernardos. **ABEONA Monitored Traffic:VANET-Assisted Cooperative Traffic Congestion Forecasting**. *IEEE Vehicular Technology Magazine*. 2014 (IF 6.038).

9. M.I. Sanchez, M. Gramaglia, C.J. Bernardos, A. de la Oliva, and M. Calderon. **On the implementation, deployment and evaluation of a networking protocol for VANETs: The VARON case**. *Elsevier Ad-Hoc Networks*. 2014 (IF 3.151).

10. M. Gramaglia, C.J. Bernardos, and M. Calderon. **Virtual induction loops based on cooperative vehicular communications**. *MDPI Sensors*. 2013 (IF 2.475).

11. M. Gramaglia, C.J. Bernardos, I. Soto, M. Calderon, and R. Baldessari. **IPv6 address autoconfiguration in geonetworking-enabled VANETs: characterization and evaluation of the ETSI solution**. *EURASIP Journal on Wireless Communications and Networking*. 2012.

12. M. Gramaglia, M. Urueña, and I. Martinez-Yelmo. **Off-line incentive mechanism for long-term P2P backup storage**. *Elsevier Computer Communications*. 2012 (IF 2.613).

13. M. Gramaglia, C.J. Bernardos, and M. Calderon. **Seamless internet 3G and opportunistic WLAN vehicular connectivity**. *EURASIP Journal on Wireless Communications and Networking*, 2011 (IF 2.407).

14. M. Gramaglia, I. Soto, C.J. Bernardos, and M. Calderon. **Overhearing Assisted Optimization of Address Auto-Configuration in Position Aware VANETs**. *IEEE Transactions on Vehicular Technology*. 2011 (IF 4.432).

15. C.J. Bernardos, M. Gramaglia, L. Contreras, M. Calderon and I. Soto. **Network-based Localized IP mobility Management: Proxy Mobile IPv6 and Current Trends in Standardization**. *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications (JoWUA), Advances in Wireless Mobile and Sensor Technologies*. 2010.

Book Chapters

1. M. Gramaglia, A. Kaloxylos, P. Spapis, X. Costa, L. Contreras, R. Trivisonno, G. Zimmermann, A. Oliva, P. Rost, P. Marsch. **E2E Architecture**. In: *5G System Design: Architectural and Functional Considerations and Long Term Research*. 2018.

2. M. Gramaglia, M. Fiore, M. Calderon, O. Trullols-Cruces, D. Naboulsi **Highway Road Traffic Modeling for ITS Simulation** in *Networking Simulation for Intelligent Transportation Systems: High Mobile Wireless Nodes*, 2017.

Posters

1. M. Gramaglia. **Optimized IPv6 Internet access from vehicles in multi-hop and heterogeneous environments**. In: *IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*. 2011.

Theses

1. M. Gramaglia. **VANET-Based optimization of infotainment and traffic efficiency vehicular services**. *Ph.D. Thesis*, Madrid, Spain, September 2012.

2. M. Gramaglia. **Speeding IPv6 Address Autoconfiguration for VANETs through Caching**. *M.Sc. Thesis*, Madrid, Spain, September 2009.

3. M. Gramaglia. Analysis and implementation of routing algorithms for MAC-PHY 802.15.4 based ad-hoc networks *M.Sc. Thesis* Turin, Italy, April 2008.

Professional activities

Chairing Service

2018	ACM WiNTECH
2017	IEEE CSCN
2016	IEEE Online Greencomm

TPC Service

2018	IEEE WCNC Since 2010
	IEEE Vehicular Technology Conference

Referee Service

IEEE Transactions on Intelligent Transportation Systems, IEEE Communication Letters, IEEE INFOCOM, IEEE Transactions on Vehicular Technology, MDPI Sensors, Computer Communications, IEEE Vehicular Technology Conference, IEEE Transactions on Vehicular Technology, IEEE Vehicular Networking Conference, IEEE Transactions on Mobile Computing, IEEE Transactions on Networking.

Personal skills

Languages

Italian	Native speaker.
English	Speak, read and write with proficiency.
Spanish	Speak, read and write with proficiency.

Computer Programming

C, C++, Java, JavaScript, Python, UNIX shell scripting, SQL, CUDA, Pandas, R, Matlab, Numpy, Git, SVN.

Networking protocols and technologies

IEEE 802.11, IPv6, LTE, 5G, SDN, NFV, ETSI NFV MANO, Machine Learning, Artificial Intelligence.

Contact

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