



Michele Polese

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Date of birth: 22/02/1992 Nationality: Italian Mother tongue: Italian

EDUCATION

- Ph.D. in Information Engineering (*University of Padova, Italy*) Start(2016, 10) – current
Project Title: Protocols and architectures for a consistent end to end user experience in mmWave 5G networks
Supervisor: Prof. Michele Zorzi
- Visiting Academic (*NYU Wireless – NYU Tandon School of Engineering, NY, USA*) Start(2017, 04) – End(2017, 04)
- MSc Student in Telecommunication Engineering (*University of Padova, Italy*) Start(2014, 10) – End(2016, 07)
Final Grade: 110 (over 110) summa cum laude
Grade Point Average: 30 (over 30)
- First level degree in Information Engineering (*University of Padova, Italy*) Start (2011, 10) – End (2014, 07)
Final Grade: 110 (over 110) summa cum laude
Grade Point Average: 29.86 (over 30)
- High School Diploma (*Liceo Scientifico Brandolini Rota, Oderzo, Italy*) Start (2006, 09) – End (2011, 07)
Final Grade: 100 (over 100) with honors

RELEVANT PROFESSIONAL EXPERIENCES

- Visitor (*AT&T Labs Research, Bedminster, NJ*) Start (2018, 05) - End (2018, 06)
Research project on mobility management in cellular networks
- Teaching Assistant for Telecommunication Networks 15/16, 16/17 and 17/18 classes (*Master in TLC Engineering, University of Padova, Italy*) Start (2015, 09) - End (2018, 02)
Final projects definition and evaluation, mentoring students in research projects, frontal lessons on LTE networks and with exercises (classes are taught in English).
- Collaborator (*LiveRobotics*) Start (2013, 09) – End (2015, 05)
Responsible for the implementation of a video streaming platform for 3G connected drones, project selected for the European Maker Faire in Rome (October 2014).
Webmaster for the website liverobotics.it.

PUBLICATIONS

Journals

- [JSAC2017] M. Polese, M. Giordani, M. Mezzavilla, S. Rangan and M. Zorzi, "Improved Handover Through Dual Connectivity in 5G mmWave Mobile Networks," in IEEE Journal on Selected Areas in Communications, vol. 35, no. 9, pp. 2069-2084, Sept. 2017.
- [IOT2017] Massimo Dalla Cia, Federico Mason, Davide Peron, Federico Chiariotti, Toktam Mahmoodi, Michele Zorzi, Andrea Zanella, "Using Smart City Data in 5G Self-Organizing Networks", IEEE IoT Journal pre-print available <http://ieeexplore.ieee.org/document/8038764/>.
- [PSC2017] Marco Mezzavilla, Michele Polese, Andrea Zanella, Aditya Dhananjay, Sundeep Rangan, Coiff Kessler, Theodore (Ted) Rappaport, Michele Zorzi, "Public Safety Communications above 6 GHz: Challenges and Opportunities", IEEE Access, 2017
- [COMST2018-1] Marco Mezzavilla, Menglei Zhang, Michele Polese, Russell Ford, Sourjya Dutta, Sundeep Rangan, Michele Zorzi, "End-to-End Simulation of 5G mmWave Networks", IEEE Communications Surveys and Tutorials, 2018.
- [COMST2018-2] Marco Giordani, Michele Polese, Arnab Roy, Douglas Castor, Michele Zorzi, "A Tutorial on Beam Management for 3GPP NR at mmWave Frequencies", submitted to IEEE Communications Surveys and Tutorials, 2018.

Magazines

- [IC2017] Michele Polese, Rittwik Jana, Michele Zorzi, "TCP and MP-TCP in 5G mmWave Networks," in IEEE Internet Computing, vol. 21, no. 5, pp. 12-19, 2017.
- [COMMAG2018-1] Menglei Zhang, Michele Polese, Marco Mezzavilla, Jing Zhu, Sundeep Rangan, Shivendra Panwar, Michele Zorzi, "Will TCP work in 5G mmWave Cellular Networks?", submitted to IEEE Communications Magazine (1st round of review), 2018
- [COMMAG2018-2] Marco Giordani, Michele Polese, Arnab Roy, Douglas Castor, Michele Zorzi, "Standalone and Non-Standalone Beam Management for 3GPP NR at mmWaves", submitted to IEEE Communications Magazine, 2018

Conferences

- [ICC2016] Michele Polese, Marco Centenaro, Andrea Zanella and Michele Zorzi, "M2M Massive Access in LTE: RACH Performance Evaluation in a Smart City Scenario", in Proceedings of the IEEE International Conference on Communications (ICC), pg. 4613-4618, May 2016, Kuala Lumpur.
- [SIM2016] Michele Polese, Marco Mezzavilla, and Michele Zorzi. "Performance Comparison of Dual Connectivity and Hard Handover for LTE-5G Tight Integration." Proceedings of the 9th EAI International Conference on Simulation Tools and Techniques, August 2016, Prague.
- [ICNC2017] Federico Chiariotti, Davide Del Testa, Michele Polese, Andrea Zanella, Giorgio Maria Di Nunzio, and Michele Zorzi, "Learning methods for long-term channel gain prediction in wireless networks", in Proceedings of the International Conference on Computing, Networking and Communications (ICNC), January 2017, San Francisco.
- [MOCAST2017] Enrico Lovisotto, Enrico Vianello, Davide Cazzaro, Michele Polese, Federico Chiariotti, Daniel Zucchetto, Andrea Zanella and Michele Zorzi, "Cell Traffic Prediction Using Joint Spatio-Temporal Information", 6th International Conference on Circuits and Systems Technologies (MOCAST), May 2017, Thessaloniki, Greece.
- [INFOCOM2017] Michele Polese, Rittwik Jana, Michele Zorzi, "TCP in 5G mmWave Networks: Link Level Retransmissions and MP-TCP", in proceedings of the IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS), May 2017, Atlanta.
- [WNS32017] Menglei Zhang, Michele Polese, Marco Mezzavilla, Sundeep Rangan, and Michele Zorzi, "ns-3 Implementation of the 3GPP MIMO Channel Model for Frequency Spectrum above 6 GHz", in Proceedings of the Workshop on ns-3 (WNS3 '17), June 2017, Porto.
- [MEDHOC2017] T. Azzino, M. Drago, M. Polese, A. Zanella and M. Zorzi, "X-TCP: a cross layer approach for TCP uplink flows in mmwave networks," 2017 16th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net), Budva, Montenegro, 2017.
- [ISWCS2017] M. Dalla Cia, F.Mason, D.Peron, F.Chiariotti, M.Polese, T.Mahmoodi, M. Zorzi, and A. Zanella, "Mobility-aware Handover Strategies in Smart Cities," in International Symposium on

Wireless Communication Systems (ISWCS), Aug. 2017.

[MMNETS2017] M. Polese, M. Mezzavilla, S. Rangan, M. Zorzi, "Mobility Management for TCP in mmWave Networks", 1st ACM Workshop on Millimeter-Wave Networks and Sensing Systems, 2017.

[ASILOMAR2017] Michele Polese, Marco Mezzavilla, Menglei Zhang, Jing Zhu, Sundeep Rangan, Shivendra Panwar, Michele Zorzi, "milliProxy: a TCP Proxy Architecture for 5G mmWave Cellular Systems", in Proceedings of the 51st Asilomar Conference on Signals, Systems and Computers, Asilomar, California, USA, 2017.

[GC2017] Mattia Gentil, Alessandro Galeazzi, Federico Chiariotti, Michele Polese, Andrea Zanella, Michele Zorzi, "A Deep Neural Network Approach for Customized Prediction of Mobile Devices Discharging Time", IEEE Globecom, 2017.

[ITENDER2017] M. Polese, M. Mezzavilla, S. Rangan, C. Kessler, M. Zorzi, "mmWave for Future Public Safety Communications", First CoNEXT Workshop on ICT Tools for Emergency Networks and DisastEr Relief (I-TENDER), 2017.

[ICNC2018] M. Drago, T. Azzino, M. Polese, C. Stefanovic, M. Zorzi, "Reliable Video Streaming over mmWave with Multi Connectivity and Network Coding", To be presented at the 2018 IEEE International Conference on Computing, Networking and Communications (ICNC), March 2018, Maui, Hawaii, USA (invited paper).

[WNS32018] T. Zugno, M. Polese, M. Zorzi, "Integration of Carrier Aggregation and Dual Connectivity for the ns-3 mmWave Module", to be presented at WNS3 2018.

[MEDHOC2018] Marco Giordani, Michele Polese, Arnab Roy, Douglas Castor, Michele Zorzi, "Initial Access Frameworks for 3GPP NR at mmWave Frequencies", to be presented at MedHocNet 2018.

[SPAWC2018] Michele Polese, Michele Zorzi, "Impact of Channel Models on the End-to-End Performance of mmWave Cellular Networks", to be presented at IEEE SPAWC 2018 (invited paper).

Other IEEE Student Member (with ComSoc and SPS), SIGMOBILE student member

Reviewer: IEEE Communication Magazine, IEEE Communication Surveys & Tutorials, IEEE JSAC, ComMag, European Wireless, ICC, RAWNET Workshop, TMC, TMM, TVT, TWC, VTC, WCNC, WNS3.

PERSONAL SKILLS

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1
Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user Common European Framework of Reference for Languages				

Certified by Cambridge ESOL Certificate in Advanced English (CAE)

Computer skills

Advanced:

- computer programming with different languages (C/C++/Java/Python/JS);
- scripting and data analysis with MATLAB, Perl;
- knowledge and understanding of discrete events simulators (ns-3, Omnet);
- SPARK, Hadoop
- scripting and automation with Bash;
- LaTeX;

Intermediate:

- data visualization with gnuplot;
- scripting and data analysis with Python;
- Git, SVN, Mercurial versioning systems;
- MS Office suite;

Basic:

- performance oriented programming.

Other skills

Experience with microcontrollers based on Arduino, video streaming systems (as ffmpeg), acquired during the period with LiveRobotics.it