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# Andrea Pizzo

## Education

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- **Ph.D. in Information Engineering**, University of Pisa, Italy, Nov 2015 – Apr 2019.  
*Supervisor*: Prof. Luca Sanguinetti.  
*Dissertation title*: “Energy efficient cellular networks for 5G communications systems”.
- **M.Sc. in Telecommunications Engineering** (*cum laude*), University of Pisa, Italy, Oct 2010 – Dec 2013.
- **B.Sc. in Telecommunications Engineering**, University of Pisa, Italy, Oct 2007 – Dec 2010.

## Research Experience

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- **Postdoctoral Associate**, Universitat Pompeu Fabra, Spain, Oct 2021 – Current.  
*Supervisor*: Prof. Angel Lozano.  
*Topic*: Near field communications and smart radio environments.
- **Postdoctoral Associate**, New York University, USA, May 2019 – May 2021.  
*Supervisor*: Prof. Thomas Marzetta.  
*Topic*: Holographic MIMO communications.
- **Visiting Ph.D. Scholar**, New York University, USA, Apr 2018 – Sep 2018.  
*Supervisor*: Prof. Thomas Marzetta.  
*Topic*: Channel modeling for beyond 5G communications.
- **Research Assistant**, Delft University of Technology, the Netherlands, Oct 2014 – Oct 2015.  
*Supervisor*: Prof. Geert Leus.  
*Topic*: Wireless localization of autonomous underwater vehicles.
- **System Engineer**, Mediterranean Broadband Infrastructure, Italy, Jan 2014 – Sep 2014.  
*Project*: <https://artes.esa.int/projects/accord>.
- **Graduate Student Intern**, Ingegneria dei Sistemi, Italy, May 2013 – Nov 2013.  
*Topic*: Peak-to-average power ratio reduction in OFDM systems.

## Honors and Awards

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- María Zambrano fellowship (NextGenerationEU), Jan 2022 – Dec 2023.
- 2018 IEEE ComSoc/VTS Young Author Best Paper Award (Italy Chapter).  
Online: <https://italy.ieeer8.org/young-author-best-paper-award-2018/>

## Professional Services

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### Editorial Services

Associate Editor for IEEE Wireless Communications Letters, March 2023 – Current.

### Reviewer in International Journals

Served as a reviewer of scientific journal articles in (among others) IEEE Transactions on Wireless Communications (TWC), IEEE Transactions on Communications (TCOM), IEEE Transactions on Signal Processing (TSP), IEEE Transactions on Green Communications and Networking (TGCN), IEEE Journal of Selected Areas in Communications (JSAC), IEEE Journal on Selected Areas in Information Theory (JSAIT), IEEE Transactions on Vehicular Technology (VT), IEEE Signal Processing Letters (SPL), IEEE Communications Letters (CL), and IEEE Wireless Communications Letters (WCL).

## Reviewer in International Conferences

Served as a reviewer of scientific conference articles in (among others) IEEE Global Communications Conference (GLOBECOM), IEEE International Conference on Communications (ICC), IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), IEEE International Symposium on Information Theory (ISIT), IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), and IEEE Vehicular Technology Conference (VTC).

## Committee Member Ph.D. Theses

- I. Colombaro, “Generalized exterior-algebraic electromagnetism in  $(k, n)$ -dimensional space-time,” Universitat Pompeu Fabra, Spain, June 2022.

## Scientific Publications

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### Book Chapters

- B1 **A. Pizzo**, L. Sanguinetti, and E. Björnson, *Energy Efficiency Analysis of 5G Communication Systems*. Institution of Engineering and Technology (IET), UK, 2020

### Journal Articles

- J8 **A. Pizzo**, A. Lozano, S. Rangan, and T. L. Marzetta, “Wide-aperture MIMO via reflection off a smooth surface,” *IEEE Trans. Wireless Commun.*, vol. 22, no. 8, pp. 5229–5239, 2023
- J7 **A. Pizzo** and A. Lozano, “On Landau’s eigenvalue theorem for line-of-sight MIMO channels,” *IEEE Wireless Commun. Lett.*, vol. 11, no. 12, pp. 2565–2569, 2022
- J6 **A. Pizzo**, A. D.-J. Torres, L. Sanguinetti, and T. L. Marzetta, “Nyquist sampling and degrees of freedom of electromagnetic fields,” *IEEE Trans. Signal Process.*, vol. 70, pp. 3935–3947, 2022
- J5 **A. Pizzo**, L. Sanguinetti, and T. L. Marzetta, “Fourier plane-wave series expansion for holographic MIMO communications,” *IEEE Trans. Wireless Commun.*, vol. 21, no. 9, pp. 6890–6905, 2022
- J4 **A. Pizzo**, L. Sanguinetti, and T. L. Marzetta, “Spatial characterization of electromagnetic random channels,” *IEEE Open J. Commun. Soc.*, vol. 3, p. 847–866, 2022  
**Selected for video presentation on the IEEE ComSoc Youtube Channel**  
Online: <https://www.youtube.com/watch?v=1oe1mLih2ko>.
- J3 **A. Pizzo**, T. L. Marzetta, and L. Sanguinetti, “Spatially-stationary model for holographic MIMO small-scale fading,” *IEEE J. Sel. Areas Commun.*, vol. 38, no. 9, pp. 1964–1979, 2020
- J2 **A. Pizzo**, A. Zappone, and L. Sanguinetti, “Solving fractional polynomial problems by polynomial optimization theory,” *IEEE Sig. Process. Lett.*, vol. 25, no. 10, pp. 1540–1544, 2018
- J1 **A. Pizzo**, D. Verenzuela, L. Sanguinetti, and E. Björnson, “Network deployment for maximal energy efficiency in uplink with multislope path loss,” *IEEE Trans. Green Commun. Netw.*, vol. 2, no. 3, pp. 735–750, 2018  
**2018 Young Author Best Paper Award from the IEEE ComSoc/VTS (Italy Chapter)**

### Conference Articles

- C8 M. Sadeghian, **A. Pizzo**, and A. Lozano, “RIS in indoor environments: Benchmarking against ambient propagation,” in *Asilomar Conf. Signals, Systems, and Computers*, 2023 (to appear)
- C7 **A. Pizzo**, A. Lozano, S. Rangan, and T. L. Marzetta, “Line-of-sight MIMO via reflection from a smooth surface,” in *IEEE Veh. Techn. Conf. (VTC2022-Spring)*, pp. 1–5, 2022
- C6 **A. Pizzo**, T. Marzetta, and L. Sanguinetti, “Holographic MIMO communications under spatially-stationary scattering,” in *Asilomar Conf. Signals, Systems, and Computers*, pp. 702–706, 2020
- C5 **A. Pizzo**, T. L. Marzetta, and L. Sanguinetti, “Degrees of freedom of holographic MIMO channels,” in *IEEE Int. Work. Sig. Process. Advances Wireless Commun. (SPAWC)*, pp. 1–5, 2020
- C4 F. Mirhosseini, **A. Pizzo**, L. Sanguinetti, and A. Tadaion, “Spectral efficiency analysis in dense massive MIMO networks,” in *IEEE Int. Work. Sig. Process. Advances Wireless Commun. (SPAWC)*, pp. 1–5, 2019
- C3 **A. Pizzo**, D. Verenzuela, L. Sanguinetti, and E. Björnson, “Network deployment for maximal energy efficiency in uplink with zero-forcing,” in *IEEE Global Commun. Conf. (GLOBECOM)*, pp. 1–7, 2017

- C2 **A. Pizzo** and L. Sanguinetti, “Optimal design of energy-efficient millimeter wave hybrid transceivers for wireless backhaul,” in *2017 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WIOPT)*, pp. 1–8, 2017
- C1 **A. Pizzo**, S. P. Chepuri, and G. Leus, “Towards multi-rigid body localization,” in *IEEE Int. Conf. Acoustics, Speech and Sig. Process. (ICASSP)*, pp. 3166–3170, 2016

## Teaching and Mentoring Experience

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### Undergraduate Teaching

- **Teaching Assistant**, Universitat Pompeu Fabra, Spain, Fall 2022, Fall 2023.  
Instructor of the seminar sessions for the course “Signals and Systems I”.
- **Adjunct Professor**, New York University, USA, Spring 2020.  
Instructor of the course “Fundamentals of Communication Theory” (ECE-UY 3404).

### Graduate Student Mentoring

- M. Sadeghian, “*Information-theoretic performance limits of RIS-based wireless networks*,” Universitat Pompeu Fabra, Spain, May 2022 – Current. (with Prof. A. Lozano).
- C. Andrioli, “*Deep Learning techniques for wireless communications*,” University of Pisa, Italy, Oct 2017 – Apr 2018. (co-supervised with Prof. L. Sanguinetti).
- F. Giorgi, “*Accurate propagation delay estimation for a novel thermal sensor*,” Delft University of Technology, the Netherlands, Feb 2015 – Aug 2015. (with Prof. A.-J. van der Veen).

## Disseminating Experience

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### Seminar Presentations (45’ talks)

- “Spatially stationary electromagnetic random channels”, New York University, USA, Sep 2018.
- —, Princeton University, USA, Aug 2018.
- —, University of Southern California, USA, Aug 2018.

### Conferences and Workshops (15’ talks/poster)

- IEEE Communication Theory Workshop (CTW), Marbella, Spain, Oct 2022.
- IEEE Vehicular Technology Conference (VTC-Spring), Helsinki, Finland, June 2022.
- GTTI Annual Meeting, Udine, Italy, March 2021.
- IEEE 54th Annual Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, USA, Nov 2020.
- 13th Annual University Days Workshop by Futurewei, Chicago, Illinois, July 2020 (co-author).
- IEEE 21th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), Atlanta, USA, May 2020.
- Information Theory and Applications Workshop (ITA), San Diego, USA, Feb 2020.
- Brooklyn 5G summit, New York, USA, May 2018.
- IEEE Global Communications Conference (GLOBECOM), Singapore, Singapore, Dec 2017.
- GTTI annual meeting, Udine, Italy, March 2021.
- IEEE SPS-EURASIP Summer School, Goteborg, Sweden, June 2017.
- 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Paris, France, May 2007.
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, China, March 2016.