

# Dario Piloni

---

## Dario Piloni

Varese (VA), 1990  
[dario.piloni@polito.it](mailto:dario.piloni@polito.it)

---

---

## Work experience

**Politecnico di Torino / Assistant Professor with time contract**  
FEBRUARY 2023 - PRESENT, TORINO (ITALY)

Assistant Professor (three-year contract according to Art. 24-A, L. 240) in the Optical communications group (OPTCOM) of the Department of Electronics and Telecommunications (DET), and teaching signal theory at the undergraduate level.

**Istituto Nazionale di Ricerca Metrologica / Primo Tecnologo**  
SEPTEMBER 2019 - PRESENT, TORINO (ITALY)

Primo Tecnologo (Senior Technologist) in the ICT department. Main duties:

- Administration of ICT infrastructure;
- Participation in the internal Open Science commission;
- Participation in the EURAMET working groups concerning the digitization of metrology and open science.

Currently on a three-year unpaid leave of absence, starting from February 2023.

**Politecnico di Torino / Post-Doc Research Fellow**  
MARCH 2019 - AUGUST 2019, TORINO (ITALY)

Continuation of the research program in high-speed optical communication systems, started during the PhD program.

**Karlsruhe Institute of Technology / Visiting PhD candidate**  
FEBRUARY 2018 - MAY 2018, KARLSRUHE (GERMANY)

Experimental analysis of long-haul transmission of PM-16-QAM transmission using a Kramers-Kronig receiver scheme.

Supervisor: Prof. Dr. Sebastian Randel.

**Alcatel-Lucent Bell Laboratories / Summer intern**  
AUGUST 2015 - OCTOBER 2015, HOLMDEL NJ (USA)

Building of experimental setups and Digital Signal Processing (DSP) for MIMO transmission over multiple-core optical fibers.

Supervisor: Dr. Sebastian Randel.

## Alcatel-Lucent Bell Laboratories / Intern

SEPTEMBER 2013 - SEPTEMBER 2014, HOLMDEL NJ (USA)

Development and application of DSP algorithms for different high-speed optical communication experiments and simulations. Preparation of the Master's degree final thesis.

Supervisor: Dr. Sebastian Randel.

---

## Education

---

### Politecnico di Torino

Ph.D. degree in Electrical, Electronics and Communications Engineering

NOVEMBER 2015 - MARCH 2019, TORINO (ITALY)

- Thesis: "[Advanced Digital Signal Processing Techniques for High-Speed Optical Links](#)". Supervisors: Prof. Gabriella Bosco and Prof. Roberto Gaudino.
- Degree: *cum Laude*

### Politecnico di Torino

Abilitazione all'Esercizio della Professione di Ingegnere dell'Informazione

II SESSION 2018

- Final grade: **362/400**

### Politecnico di Milano

Master of Science Degree, Telecommunications Engineering

SEPTEMBER 2012 - JULY 2015, MILANO (ITALY)

- Final grade: **110/110 cum Laude**
- Final thesis title: "[Discrete-multitone modulation for short distance 100 Gbit/s optical links](#)". Supervisors: Prof. Maurizio Magarini and Dr. Sebastian Randel.

### Politecnico di Milano

Bachelor of Science Degree, Telecommunications Engineering

SEPTEMBER 2009 - JULY 2012, MILANO (ITALY)

- Final grade: **110/110 cum Laude**

---

## Skills

- 
- Deep knowledge of main Digital Signal Processing (DSP) algorithms and modulation formats for high-speed optical communication systems, and their implementation using MATLAB;
  - Deep knowledge of administration ICT systems, particularly in research organizations;

---

## Foreign languages

- Italian: mother tongue.
- English: fluent (CEFR C1/C2)
  - TOEFL iBT Test score: 107/120 (2015)
- German: good (CEFR B2/C1)
  - Zweisprachigkeitsnachweis C1 from Autonome Provinz Bozen/Provincia autonoma di Bolzano (2023)

---

## Selected publications

1. **Pilori D.**, Cantono M., Ferrari A., Carena A., Curri V., "Observing the effect of polarization mode dispersion on nonlinear interference generation in wide-band optical links," OSA Continuum 2, 2856-2863 (2019).
  2. Golani O, **Pilori D.**, Guiomar F. P. P. , Bosco G. , Carena A., Shtaif M., "Correlated Nonlinear Phase-Noise in Multi-Subcarrier Systems: Modeling and Mitigation," in Journal of Lightwave Technology, vol. 38, no. 6, pp. 1148-1156, 15 March 15, 2020.
  3. **Pilori D.**, Nespola A., Forghieri F., Bosco G., "Non-Linear Phase Noise Mitigation Over Systems Using Constellation Shaping," in Journal of Lightwave Technology, vol. 37, no. 14, pp. 3475-3482, 15 July 15, 2019..
  4. Cantono, M., Ferrari, A., **Pilori, D.**, Virgillito, E., Augé, J. L., Curri, V., "Physical Layer Performance of Multi-Band Optical Line Systems Using Raman Amplification," J. Opt. Commun. Netw. 11, A103-A110 (2019)
  5. **Pilori, D.**, Bertignono, L., Nespola, A., Forghieri, F., Bosco, G., "Comparison of Probabilistically Shaped 64QAM With Lower Cardinality Uniform Constellations in Long-Haul Optical Systems" [invited], Journal of Lightwave Technology, vol. 36, no. 2, pp. 501-509, January 2018
  6. **Pilori, D.**, Bertignono, L., Nespola, A., Forghieri, F., Mazzini, M., Gaudino, R., "Bidirectional 4-PAM to Double Per-Fiber Capacity in 2-km Intra-Datacenter Links", IEEE Photonics Journal, vol. 10, no. 2, pp. 1-10, April 2018
  7. **Pilori, D.**, Fludger, C., and Gaudino, R. "Comparing DMT Variants in Medium-Reach 100G Optically Amplified Systems", Journal of Lightwave Technology, vol. 34, no. 14, pp. 3389-3399, July 2016
  8. Cantono, M., **Pilori, D.**, Ferrari, A., Catanese, C., Thouras, J., Auge, J.L., Curri, V., "On the Interplay of Nonlinear Interference Generation with Stimulated Raman Scattering for QoT Estimation", to appear in: Journal of Lightwave Technology
  9. Kashef, S.S., Azmi, P., Bosco, G., Matinfar, M.D., **Pilori, D.**, "Non-Gaussian statistics of CO-OFDM signals after non-linear optical fibre transmission", IET Optoelectronics, vol. 12, no. 3, pp. 150-155, June 2018
-

## Patents

1. Randel, S.A., **Pilori, D.** "*Reduction of effects of signal-signal beat interference in optical transport systems*". U.S. Patent no. 9,374,171