

# FRANCESCO LORENZI

Born in Arzignano (Vicenza) on 15 September 1998

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## APPOINTMENTS AND EDUCATION

- Oct. 2025 -  
now **Postdoctoral researcher** in Photonics and Electromagnetics - Department of Information Engineering, Università degli Studi di Padova  
Current research interests: theoretical light propagation, slow and guided-wave photonics, nonlinear effects in waveguides, geometric methods for classical electrodynamics, and optical solitons.
- Oct. 2023 -  
Sep. 2025 **Ph.D.** in Theoretical Physics of Matter - Università degli Studi di Padova  
*Cum laude*  
Quantum Information and Matter group.  
Supervisor: Prof. Luca Salasnich.  
*Thesis title:* Nonlinear physics of ultracold quantum gases and optical fields in media.
- Oct. 2020-  
Sep. 2022 **M.Sc.** in ICT for Internet and Multimedia - Università degli Studi di Padova  
Final grade: 110/110 *with honors*.  
Weighted exam average: 30/30.  
*Thesis title:* Nonlinear noise in WDM systems: study of classical and quantum channel interaction and capacity.
- Oct. 2017-  
Sep. 2022 **B.Sc.** in Ingegneria dell'Informazione - Università degli Studi di Padova  
Final grade: 110/110 *with honors*.  
*Thesis title:* Dispersione cromatica e non linearità in fibra ottica, un'analisi simulativa.

## PUBLICATIONS

Publication list available at

[Google Scholar](#) • [ORCID](#).

I served as a reviewer for *Journal of Low Temperature Physics* and *Journal of Lightwave Technology*. Co-reviewer for *Nature Communications*.

A list of presentations, seminars, and posters is available on my website:

[lorenzifrancesco.github.io](http://lorenzifrancesco.github.io).

## SELECTED CONFERENCES, VISITS AND ACADEMIC ACTIVITY

- Mar. 2026 Member of the organizing committee for FNIP day 2026 | Neuroimaging & Photonics, Padova (Italy).
- Oct. 2025 Co-organizer of the 9th FNIP seminar | T3 webinar “Open-source tools for classical and quantum optics” (23 October 2025).
- Aug. 2025 Poster and flash talk at the Bad Honnef Physics School on Ultracold Quantum Matter, Bad Honnef (Germany).
- May. 2024 Poster at the Atomtronics conference, Benasque (Spain).

Jan. 2024	Poster at the CAPS meeting, Barcelona (Spain).
Oct. 2023 - Feb. 2024	Visiting researcher at Universitat Politècnica de Catalunya, working on effective interaction theories for ultracold atoms and Monte Carlo methods, Barcelona (Spain).
Sep. 2023	Speaker at the CMD30/FisMat2023 conference, Milan (Italy).
Feb. 2023	Attended the Statistical Field Theory 2023 School at the Galileo Galilei Institute for Theoretical Physics, Florence (Italy).
Jan. 2023	Attended the XII series of Majorana Lectures, entitled “Solving quantum many-body problems with classical and quantum computers”, delivered by Prof. Ignacio Cirac at the Università degli Studi di Napoli (Italy).
2021-now	Tutor and teaching assistant for the courses “Fisica 1” “Fisica 2” and “Fondamenti di Algebra lineare e Geometria”. Total funding: $\approx 3\text{k€}$ , Università degli Studi di Padova (Italy).

## AWARDS AND FUNDING

2021	“Premio di studio del Rotary Club di Padova”, named after Prof. Carlo Giacomo Smeda – awarded for academic excellence and service to the community. Amount: 1.2k€.
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## RELEVANT SKILLS

### Programming skills

Advanced: Python, Julia, MATLAB, Git/GitHub,  $\text{\LaTeX}$ .

Intermediate: C, C++, CST-FEM, Rust.

Basic: Fortran, x86 assembly, HTML, SQL, PHP.

### Language skills

English: *B2 (FCE)*.

## RESEARCH INTERESTS

Theoretical photonics and light propagation • Slow light and guided-wave structures,  $\mathcal{PT}$ -symmetry and non-hermitian dynamics • Nonlinear waves and solitons in optical and matter-wave media • Classical and quantum field theory • Ultracold quantum gases and scattering theory • Nonlinear wave theory and numerical methods

## OTHER INTERESTS

Integrable systems • Information and control theory • Optical and quantum communications • RF and microwave electronics • Amateur radio experimentation (callsign IU3UHF)

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updated April 4, 2026.