Lorenzo Piccinini

Curriculum Vitae

Personal Information

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Birth	16.08.1999

Education

01/11/2023-Present **PhD in Mathematics (Second of a Three Year Program)**, *Supervisor: Professor Valeria Simoncini*, University of Bologna, Bologna, Italy

16-20/06/2025 **Cini HPC Summer School**, *CNR-IAC, Università degli studi di Napoli Federico II, Università degli studi di Napoli Parthenope*, Napoli, Italy

28-29/02/2024 **Parallel Programming - Leonardo**, *CINECA and Genova SIIT*, Genova, Italy
(CINECA is the main Italian High-Performance Computing center)

05-08/03/2023 **Introduction to Parallel Computing with MPI and OpenMP**, *CINECA*, Bologna, Italy

2021-2023 **Master of Science in Advanced Mathematics for Application: 110/110 Cum Laude**, *University of Bologna*, Bologna, Italy
Thesis title: "Least square methods for Sylvester-like linear matrix equations"

2018-2021 **Bachelor of Science in Mathematics**, *University of Bologna*, Bologna, Italy
Thesis title: "Metodi numerici per l'equazione matriciale di Sylvester"

Professional Experience

10/2022-Present **Tutor for the course Numerical Analysis (Calcolo Numerico), prof. Valeria Simoncini**, *Department of Mathematics*, University of Bologna

03/2022-09/2022 **Tutor for the course Numerical Analysis and Geometrical Modelling, prof. Carolina Beccari**, *Department of Engineering*, University of Bologna

Scientific Dissemination

02-06/02/2026 **Workshop**, Randomized Numerical Linear Algebra workshop at ICERM, Providence

07-09/01/2026 **Talk**, *"Randomized biorthogonalization through a two-sided Gram-Schmidt process"*, at METT XI, 11th Workshop on Matrix Equations and Tensor Techniques, Leuven, Belgium

07-10/10/2025 **Talk**, *"Randomized Two-Sided Gram-Schmidt Process With Applications"*, at Workshop on Approximate Computing in Numerical Linear Algebra, Paris, France

31/08/2025-05/09/2025 **Poster**, *"Randomized biorthogonalization through a two-sided Gram-Schmidt process"*, at the INdAM Workshop: Low-rank Structures and Numerical Methods in Matrix and Tensor Computations, Palazzone di Cortona, Cortona (Ar), Italy

07-12/07/2025 **Talk**, *"Tensor-oriented LSQR for Tensor Least Squares Problems"*, at the PVD75 - Proper Value Decomposition workshop in honor of the seventy-fifth birthday of Paul Van Dooren, Hotel Sierra Silvana, Selva di Fasano (Br), Italy

10-11/01/2025 **Talk**, *"TNumerical Methods for Matrix and Tensor Least Squares Problems"*, at the "Joint GNCS-SIAM Chapters Meeting for Young Researchers in Numerical Analysis and Applied Mathematics", Pavia, Italy

20-21/01/2025 **Talk**, *"Truncated LSQR for Least Squares Problems"*, at the "Due Giorni di Algebra Lineare Numerica e Applicazioni", Pisa, Italy

21/10/2024 **Talk**, *"Truncated LSQR for Matrix and Tensor Least Squares Problems"*, at the PYSANUM group (University of Pisa and SNS), Pisa, Italy

16/09/2024-20/09/2024 **Talk**, *"Truncated LSQR for Matrix and Tensor Least Squares Problems"*, at the CIRM Numerical Linear Algebra Conference in Luminy, Marseille (F)

06/2024 **Talk**, *" One day of numerical linear algebra "*, organized by prof. Laura Grigori and prof Daniel Kressner at the EPFL, Lausanne (CH)

13/05/2024-17/05/2024 **Talk**, *"Truncated LSQR for Matrix Least Squares Problems" at the SIAM LA24*, Paris, Minisymposium "MS84 Matrix and Tensor Equations in Action: Simulation, Model Reduction and Scientific Machine Learning"

24/04/2024 **Talk**, *"Truncated LSQR for Matrix Leasts Squares Problems and Application to Dictionary Learning"*, University of Bologna, Cycle of seminars "SCUBE" organized by Davide Palitta and Valeria Simoncini

Long-term Scientific Visits

01/03/2025-01/06/2025 **Visiting period**, hosted at the EPFL, Lausanne (CH), by professor Laura Grigori

28/05/2024-29/06/2024 **Visiting period**, hosted at the EPFL, Lausanne (CH), by professor Laura Grigori

01/03/2023-29/05/2023 **Visiting period**, hosted by professor Karl Meerbergen at the KU Leuven, Department of Computer Science, during the visiting period, I had the opportunity to work with prof. Karl Meerbergen and to follow seminars from the NUMA research group.

Publications (Reverse chronological order)

(Submitted) M. Iannacito, L. Piccinini, and V. Simoncini. *"Randomized biorthogonalization through a two-sided Gram-Schmidt process"*, *September 2025*, ArXiV 2602.21974, https://arxiv.org/abs/2602.21974

(Submitted) L. Grigori, L. Piccinini, and I. Simunec. *"Subspace gradient descent method for linear tensor equations"*, *February 2026*, ArXiv 2509.04386, https://arxiv.org/abs/2509.04386

(Published) L. Piccinini, and V. Simoncini. *"TT-LSQR For Tensor Least Squares Problems and Application to Data Mining"*, Numerical Algorithms (2025), https://doi.org/10.1007/s11075-025-02204-8.

(Published) L. Piccinini, and V. Simoncini. *"Truncated LSQR for matrix least squares problems"*, *Computational Optimization and Application (COAP), v.91 (2025), pp.905-932. DOI: 10.1007/s10589-024-00629-w.*

Skills

Programming	o Matlab o Python o LaTeX o C++ (basic) o OpenMP o MPI
Languages	o Italian (native) o English (C2) o Greek (A2)