

Daniele Toni

curriculum vitæ

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education

- 2024-ongoing **PhD in Applied Mathematics - Scuola Normale Superiore, Pisa.**
supervisor: Alice Cortinovis. (internal advisor: Michele Benzi)
- 2022-2024 **Master Degree in General Mathematics - University of Bologna, 27/09/2024.**
Thesis: On the numerical solution of linear matrix equations stemming from finite elements
supervisor: Valeria Simoncini.
final mark: 110/110 summa cum laude
- 2019-2022 **Bachelor of Science in Mathematics - University of Bologna, 22/07/2022.**
Thesis: Operator preconditioning per sistemi lineari provenienti dall'equazione di Poisson
supervisor: Valeria Simoncini.
final mark: 110/110 summa cum laude
- 2014-2019 **High School Diploma, IIS Cattaneo dall'Aglio, Castelnovo ne' Monti.**
final mark: 100/100

talks

- may '26: "**27th Conference of the International Linear Algebra Society ILAS**", Blacksburg.
Minisymposium "Polynomials, Krylov Methods and Applications".
title: "*Preconditioned log-determinant approximation: one probe vector is almost always enough!*",
"Polynomials, Krylov Methods and Applications"
- jan '26: "**Mathematics of Data Driven Models**", L'Aquila.
title: "*One probe is enough for log-det estimation*"

teaching activities

- Teaching Assistant, A.Y. 2022-2023, "*Analisi Numerica e Modellizzazione Geometrica*", Bachelor degree in Industrial Product Design, University of Bologna
- Teaching Assistant, A.Y. 2023-2024, "*Analisi Numerica e Modellizzazione Geometrica*", Bachelor degree in Industrial Product Design, University of Bologna

professional activities

- Conference Staff, "Third Italian Meeting on Probability and Mathematical Statistics", Bologna, 13-16/06/2022
- Organizer, "PYSANUM", Pisa, 2025/2028

publications

1. **Alice Cortinovis, D. Toni,** *Detecting when one probe vector is enough for preconditioned log-determinant approximation.* Numerical Linear Algebra with Applications, 2026.

2. **Valeria Simoncini, D. Toni,** *On some structural properties of generalized Lyapunov eigen-problems and application to operator preconditioning.* Bollettino Unione Matematica Italiana, 2023.

———— preprints