TOMAS ESPAÑA

tomas.espana@princeton.edu | GitHub | Website | Scholar

EXPERIENCE

Scuola Normale Superiore of Pisa — *Pisa, Italy*
Research Intern — *4 months – 2025*
- Reinforcement Learning for Optimal Execution with the Queue Reactive Model
- Supervisors: Yadh Hafsi, Edoardo Vittori, Fabrizio Lillo

EconophysiX - CFM Chair of Econophysics & Complex Systems at Ecole Polytechnique — *Paris, France*
Research Intern — *6 months – 2024*
- High-dimensional Statistics, Random Matrix Theory, Portfolio Optimization
- Supervisors: Victor Le Coz, Matteo Smerlak, Jean-Philippe Bouchaud

CFM - Capital Fund Management — *Paris, France*
Quantitative Research Intern — *6 months – 2023*
- Market Latency (Queueing Theory & Optimization) and Market Microstructure for the Execution Strategies team
- Coded a latency simulator of the CFM order pipeline to improve execution speed.

Math Teaching Assistant
- Measure Theory and Partial Differential Equations at CentraleSupélec (2023) & ORF 309 at Princeton (2026)

EDUCATION

Ph.D. - Operations Research & Financial Engineering - Princeton University — *Princeton, USA*
Advised by Prof. Jianqing Fan — *2025 – Present*

M2MO - Université Paris Cité — *Paris, France*
MS in Mathematics: Probability, Finance & Data Science — *2024 – 2025*

CentraleSupélec - Université Paris-Saclay — *Paris, France*
BS and MS of Science and Engineering - French Engineering "Grande Ecole" — *2021 – 2025*

AWARDS

- Gordon Y.S. Wu Fellowship in Engineering. Awarded upon admission to the Princeton Ph.D. program (2025).

PUBLICATIONS

$^{\alpha\beta}$=Alphabetically ordered authorship

Journal Articles:

- $^{\alpha\beta}$P. Bousseyroux, **TE**, M. Smerlak. *Another Marčenko-Pastur for Kendall's Tau*. Electronic Communications in Probability (ECP), 2026. Paper.

Pre-prints:

- $^{\alpha\beta}$J.-P. Bouchaud, P. Bousseyroux, **TE**, M. Smerlak. *Spectra of high-dimensional Spearman correlation matrices under scale-mixture dependence*. arXiv preprint, 2026. Paper.
- **TE**, Y. Hafsi, F. Lillo E. Vittori. *Reinforcement Learning in Queue-Reactive Models: Application to Optimal Execution*. arXiv preprint, 2025. Paper.
- $^{\alpha\beta}$F. Benaych-Georges, **TE**. *Random Matrices and U-Statistics*. arXiv preprint, 2025. Paper.
- **TE**, V. Le Coz, M. Smerlak. *Kendall Correlation Coefficients for Portfolio Optimization*. arXiv preprint, 2024. Paper.

Journal Reviewing:

- Stochastic Processes and their Applications (SPA)

CONFERENCES

- *SIAM Conference on Financial Mathematics and Engineering*, Miami, July 2025.
- Poster Presentation. *18th Financial Risks International Forum*, Paris, March 2025.
- Poster Presentation. *Brunel-Bielefeld Workshop on Random Matrix Theory and Applications*, London, December 2024.
- Poster Presentation. *Random Tensors and Related Topics*, Paris, October 2024.