

# Wael Mattar

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## Profile

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Applied mathematician with extensive knowledge, experience and enthusiasm to solve real-life problems. Currently at my last stages of my Ph.D. studies at Tel Aviv University under the supervision of Prof. Nir Sharon.

## Education

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- Ph.D.** in Applied Mathematics at **Tel Aviv University** 2022 – present
- Thesis title: "Advances in Multiscale Analysis and Applications" currently under review.
- M.Sc.** in Applied Mathematics at **Tel Aviv University**, Magna Cum Laude 2018 – 2021
- 97 thesis grade and 91 GPA
  - Thesis topic: Multiscale Representations of Manifold-valued Data Via Sub-division Operators
  - Coursework: Mathematical Foundation of Machine Learning, Optimization, Spectral Methods in Data Analysis
- B.Sc.** in Applied Mathematics at **Ort Braude College**, Cum Laude 2015 – 2018
- 86 GPA
  - Final project: Analyticity of Semigroups
  - Coursework: Data Structures, Algorithms, Numerical Analysis and Approximation Theory
  - 2 research-level seminars in Complex Analysis

## Experience

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- Tel Aviv University**, Teaching Assistant Tel Aviv, IL 2022 – present
- Teaching Harmonic Analysis and Ordinary Differential Equations to Engineering students, and Scientific Computing for Mathematicians.
- Genesis Molecular AI**, Machine Learning Research Intern San Diego, CA 2026 – 2026
- Completed a three-month internship at Genesis, focused on developing algorithms for diffusion models in a post-training setting.
- Nemodata**, Data Scientist Tel Aviv, IL 2021 – 2022
- Developing mathematical models to predict vehicle malfunctions based on acquired data and scheduling preventive maintenance accordingly.
- Ort Braude College**, Teaching Assistant Tel Aviv, IL 2018 – 2021
- Teaching Calculus, Algebra and Differential Equations to Engineering students.

## Publications

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- Multiscaling in Wasserstein Spaces** [↗](#) 2026  
*W. Mattar*, N. Sharon  
To appear in Multiscale Modeling and Simulation, 2026.
- Multiscale analysis via pseudo-reversing and applications to manifold-valued sequences** [↗](#) 2025

**W. Mattar**, N. Sharon

Journal of Computational and Applied Mathematics, Volume 474, 2025.

**Wavelets Are All You Need for Autoregressive Image Generation** [↗](#)

2025

**W. Mattar**, I. Levy, N. Sharon, S. Dekel

Pure and Applied Functional Analysis

**Pyramid Transform of Manifold Data via Subdivision Operators** [↗](#)

2023

**W. Mattar**, N. Sharon

IMA Journal of Numerical Analysis, Volume 43, Issue 1, Pages 387 - 413, 2023.

## Preprints

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**Pyramid Transforms via Nonstationary Subdivision Schemes** [↗](#)

2025

H. Landau, **W. Mattar**, N. Sharon

## Awards and Scholarships

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1. Excellence in Doctoral Research Award – granted by the School of Mathematical Sciences, TAU (July 2025)
2. The Nehemia Levtzion Scholarship for Outstanding Doctoral Students From the Periphery (August 2023)
3. Excellence in Research, granted by the faculty of Exact Sciences, TAU (April 2023)
4. The Council for Higher Education Scholarship for Arab Students in Graduate Studies (December 2018)

## Skills

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**Programming:** C, Python, MATLAB and LaTeX

**Languages:** Arabic as a native language, English and Hebrew in full proficiency.