Angelo El Saliby

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PhD student

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Academic Interests

I am mainly interested in algebraic geometry and its many faceted applications. Under the supervision of Dani Kaufman and Irem Portakal, I am currently learning about cluster algebras and toric geometry. My Master's thesis was about the combinatorial aspects of graph rigidity, with a focus on matroids and global rigidity.

Teaching Experience

University of Trieste

- Tutor, *Linear Algebra* (50 hours workload. Fall, 2024 at University of Trieste).
- Tutor and grader, *Curves and Surfaces* (50 hours workload. Spring, 2024 at University of Trieste).

Events

- Macaulay2 in the sciences, 25-28 Nov. 2024. Workshop at MPI MIS, Leipzig. In the group *Algebraic statistics*. Under the supervision of Carlos Amendola, together with Felix Lotter and Oriol Reigfite, we started the development of a Macaulay2 package for the study of path signatures. A preprint of the related article is available here.
- Mathematics in Ljubljana, 2023. One week summer school at the Department of Mathematics of the University of Ljubljana.

Education

MSs, *Advanced Mathematics*, University of Trieste. Language : English.

- Graduation: July 17th, 2025. Grade: 110/110 cum laude.
- Thesis: *Global rigidity of highly connected graphs*. Advisor: Matteo Gallet.
- Most relevant courses:

  Computational algebra: An introduction to Gröbner basis and their applications, by Matteo Gallet.

  Topics in advanced algebra: Based on the book "Derived functors and sheaf cohomology" by, and delivered by, Ugo Bruzzo.

  Algebraic geometry: An introduction to schemes, by Andrea Ricolfi.

  Derived Categories in Algebraic Geometry: A course "devoted to rederiving the results in Hartshorne Chapter 3 in the language of derived categories, and in particular introducing derived functors that are unavailable in his framework because of the lack of projective objects among sheaves of modules". This is a SISSA PhD course that I only informally attended.

[1] Updated November 4, 2025

BSc, *Mathematics*, University of Trieste. Language: Italian.

- October, 2022. Grade: 110/110 cum laude.
- Thesis: *Some results in homotopy theory* (Italian). Advisor: Mattia Mecchia.

Community activities

Students representative

From 2020 to 2025 I served as a student representative for the courses in Mathematics at the University of Trieste. I participated in monthly meetings with the Department's faculty members and facilitated communication between my fellow students and the Department.

Technical skills and languages

Programming and computational tools

Intermidiate[1]: Macaulay2, Python, Matlab, Java, TypeScript (React, Node), HTML/CSS.

Base: C++, Sage.

Languages:

Italian, English, Arabic.

[1] This is a self assesment. *Intermediate* means that I am comfortable working with the tool, perhaps after some review. *Base* means that I have used the tool in the past, but I would need some time or guidance to use it effectively.