

# SERGIO CRISTANCHO

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**Languages:** Spanish (native), English (fluent), German (waystage), Italian (waystage). **Citizenship:** Colombian.

## PERSONAL STATEMENT

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I am a third year graduate student in Applied and Computational Mathematics at Princeton University. I am broadly interested in the intersection of algebra, geometry and combinatorics, and applications.

## EDUCATION

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<b>Universidad de los Andes</b>	Bogotá, Colombia
B.S. in Mathematics,	2020
B.S. in Physics,	2021
M.S. in Mathematics,	2023
<b>Princeton University</b>	Princeton, New Jersey
P.h.D. in Applied Mathematics,	Ongoing

## TEACHING EXPERIENCE

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<b>Teaching Assistant</b>	
Real Analysis, Abstract Algebra, Enumerative Combinatorics, Linear Algebra	Universidad de los Andes
Abstract Algebra, Applied Algebra, Honors Linear Algebra	Princeton University
<b>Mentor for the Directed Reading Program</b>	Princeton University

## RESEARCH

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### Publications:

- With Mauricio Velasco (2024). Harmonic Hierarchies for Polynomial Optimization. *SIAM Journal on Optimization* 2024 34:1, 590-615.

### Talks:

- Inequalities for metric trees and matroids. *Discrete Math Seminar*, University of Massachusetts Amherst, September 2025.
- Three proofs of the reverse Khovanskii-Teissier Inequality. *Special Year Seminar*, Institute for Advanced Study, January 2025.
- Harmonic Hierarchies for Polynomial Optimization on Homogeneous Spaces. *SIAM Conference on Applied Algebraic Geometry 2023 (SIAM AG23)*, Eindhoven University of Technology, July 2023.
- Harmonic Hierarchies for Polynomial Optimization. *International Conference on Continuous Optimization (ICCOPT 2022)*, Lehigh University, July 2022.
- Harmonic Hierarchies for Polynomial Optimization. *Conferencia Colombiana de Matemáticas Aplicadas e Industriales (MAPI 2)*, June 2022.