

Alex Junior Gomez Saltachin

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Research Interests

Algebraic Geometry, Homological Mirror Symmetry, Fano and log del Pezzo Geometry, Derived Categories, Semiorthogonal Decompositions, Exceptional Collections, Periods of Landau–Ginzburg Models, Modular Forms, and Arithmetic Aspects of Mirror Symmetry.

Preprints and Manuscripts

- *Exceptional Collections for Canonical Stacks of Log del Pezzo Surfaces with $\frac{1}{3}(1, 1)$ -Singularities*, in preparation. Expected release: June 2026.
- *Real Bruhat Intersections and Complex Open Richardson Varieties*, draft communication, 2026.

Education

- **PhD in Mathematics**, PUC-Rio, Brazil, 2023–present.
Advisor: Sergey Galkin.
- **MSc in Mathematics**, Pontificia Universidad Católica del Perú, 2019.
Thesis: *Modular Forms*.
- **BSc in Mathematics, First Class Honors**, Pontificia Universidad Católica del Perú, 2015.
Thesis: *Elliptic Curves: Mordell–Weil, Roth and Siegel Theorems*.

Honors and Scholarships

- **FAPERJ Nota 10 Excellence Scholarship**, Rio de Janeiro, Brazil, 2024–present.
- **First Class Honors**, BSc in Mathematics, Pontificia Universidad Católica del Perú, 2015.

Selected Schools and Programs

- RGAS Summer School: *Mirror Symmetry and Homological Methods in Algebraic Geometry*, Zaragoza, 2026.
- ICTP School and Workshop on Explicit Arithmetic Geometry, ICTP, 2025.
- Conference on Recent Developments in Topological Quantum Field Theory, BIMSA, 2024.
- The Mordell Conjecture 100 Years Later, MIT, 2024.
- ICTP String-Math, ICTP, 2024.
- CIMPA ELGA – Latin American School of Algebraic Geometry, 2024.
- Arizona Winter School, 2022 and 2023.
- IHES Summer School on the Langlands Program, 2022.
- ICTP–CIMPA Schools in Arithmetic Geometry, 2015 and 2018.

Selected Talks and Posters

- *Exceptional Collections for Canonical Stacks of Log del Pezzo Surfaces with $\frac{1}{3}(1, 1)$ -Singularities*, poster presentation, RGAS Summer School, Zaragoza, 2026.
- *Periods in Homological Mirror Symmetry and Kloosterman Motives*, ICTP, 2025.
- *A Tentative Relationship Between Homological Mirror Symmetry and Arithmetic Geometry*, Arithmetic and p -adic Geometry in Chile, 2024.
- *Mordell–Weil Theorem*, PUC-Rio Friday Seminar, 2024.
- *Karoubian Completion of Triangulated Categories*, PUC-Rio Friday Seminar, 2024.

Teaching Experience

Graduate Instructor and Teaching Assistant at PUC-Rio and PUCP, 2013–2026.

Courses taught or assisted include Linear Algebra, Algebra, Real Analysis, Complex Analysis, Calculus, and Mathematics for Economists.

Academic Service

- Co-founder and organizer of the *38 Movimientos Seminar*.
- Co-organizer of the *Meetings on Arithmetic and Algebraic Number Theory Seminar*.

Languages

Spanish native; English advanced; Portuguese advanced; basic Chinese and French.

References

- **Sergey Galkin** — PhD Advisor, PUC-Rio.
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- **Misha Verbitsky** — IMPA.
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- **Sergei Burkin** — PUC-Rio.
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- **Alfredo Poirier** — MSc Advisor, PUCP.
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- **Rudy Rosas** — PUCP.
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- **Richard Gonzales** — PUCP.
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- **Jaime Cuadros** — PUCP.
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- **Percy Fernandez** — PUCP.
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