

Guilherme Cerqueira Gonçalves

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06 January 1999, Brazilian

Curriculum Vitae

Education

- 2023 – 2026 **PhD in Mathematics**, *Institut de mathématiques de Toulouse*, Université Toulouse III - Paul Sabatier, UT3, Toulouse, France
Advisor: Vincent Guedj
- 2022 – 2023 **Master's Degree in Mathematics**, *Institut de mathématiques de Toulouse*, Université Toulouse III - Paul Sabatier, UT3, Toulouse, France
- 2018 – 2022 **Bachelor's degree in Mathematics**, Univerisdade de São Paulo, USP, São Paulo, Brazil
Prize for outstanding performance.

Research projects and grants

- 2023 – 2026 **MINT PhD Fellowship**, *Scholarship for a PhD in Toulouse*, Funded by Mathematics and INteractions in Toulouse, ANR-18-EURE-0023
- 2022 – 2023 **MINT Master 2 Fellowship**, *Scholarship for a Master's degree in Toulouse*, Funded by Mathematics and INteractions in Toulouse
- 2021 – 2022 **Undergraduate Research Project**, *Finsler Distance Function and Wavefronts*, Funded by FAPESP, Grant FAPESP 2021/00551-3
Under supervision of Prof. Marcos M. Alexandrino
- 2019 – 2020 **Undergraduate Research Project**, *Some applications of mechanics in Riemannian and Finslerian Geometry*, Funded by FAPESP, Grant FAPESP 2019/22488-1
Under supervision of Prof. Marcos M. Alexandrino

Articles

- 2025 **Singular Gauduchon conjecture**, *Submitted*, [arXiv:2512.19830](https://arxiv.org/abs/2512.19830)
- 2024 **Modulus of Continuity of Solutions to Complex Monge-Ampère Equations on Stein Spaces**, *To appear in Indiana Univ. Math. J.*, [arXiv:2405.17242](https://arxiv.org/abs/2405.17242)

Talks

- Singular Gauduchon conjecture
- 11 May 2026 **Seminario informale di Geometria Complessa**, *Università degli studi Firenze*, Florence, Italy
- 31 Mar. 2026 **Séminaire systèmes dynamiques et géométrie**, *Universit 'e d'Angers*, Angers, France
- 9 Mar. 2026 **Workshop MARGE 4: New directions in complex geometry**, *Université de Montpellier*, Montpellier, France
- Singular Gauduchon metrics
- 26 Mar. 2026 **Offsite Complex Geometry seminar of Toulouse**, Albi, France
- Hölder continuity of solutions to complex Monge-Ampère equations on singular spaces
- 14 Aug. 2025 **Simons School on singular Kählerian metrics and Hermitian geometry**, *Rényi Institute*, Budapest, Hungary
Lightning Talk
- 01 Apr. 2025 **Informal Geometry Workshop in Paradiso 2025**, Cogne, Italy
- 12 Dec. 2024 **Session régionale du séminaire des doctorant.e.s**, *Université de Toulouse*, Toulouse, France

As an undergraduate

- 2022 **Conecting Finsler Geometry and Mechanics via Geodesics**, 1st EPPM (São Paulo Graduate students Encounter on Mathematics), Brazil, *online*. [Recording \(in Portuguese\)](#)
- 2021 **Conecting Finsler Geometry and Mechanics via Geodesics**, Undergraduate Thesis Presentation, IME-USP, University of São Paulo, Brazil.
- 2021 **Finsler Distance Functions and Wavefronts**, 29th International Simposium of Scientific Iniciation of the University of São Paulo (SIICUSP), IME-USP, University of São Paulo, Brazil.
- 2020 **Some applications of mechanics in Riemannian and Finslerian Geometry**, 28th International Simposium of Scientific Iniciation of the University of São Paulo (SIICUSP), IME-USP, University of São Paulo, Brazil.
- To the general public
- 2025 **Quid of complex Monge-Ampère equations**, Quid Seminar, Université de Toulouse, France
- 2021 **Formalization of Classical Mechanics: different facets of modern Geometry**, S4 Seminar, IME-USP, University of São Paulo, Brazil.
- 2020 **What is (Hyperbolic) Geometry?**, S4 Seminar, IME-USP, University of São Paulo, Brazil.
- 2020 **Why doesn't e^{x^2} have an elementary integral? A gentle introduction to Differential Galois Theory**, S4 Seminar, IME-USP, University of São Paulo, Brazil.

Professional

Visits

- May 2026 **Scientific visit to Daniele Angella**, *Università di Firenze*, Florence, Italy
One week visit.
- Nov. 2024 **Special Geometric Structures and Analysis**, *SLMath*, Berkeley, USA
Two weeks visit to the program.

Events attended

- Jun. 2026 **Kähler Geometry Workshop in Sardinia 2026**, Sardinia; Italy.
- May 2026 **Complex Geometry in Bordeaux**, Institut de Mathématiques de Bordeaux, Bordeaux; France.
- May 2026 **Generalized Complex Geometry**, Geometry and TACoS, online.
- Jan. 2026 **Workshop KRIS: On Singular Kähler-Ricci flows**, Workshop Singular Kähler-Ricci flows (KRIS), Toulouse; France.
- Aug. 2025 **Simons School on singular Kählerian metrics and Hermitian geometry**, Summer school, Rényi Institute, Budapest; Hungary.
- Aug.2025 **Simons School: Invitation to complex geometry**, Summer school, Rényi Institute, Budapest; Hungary.
- May 2025 **Vaisman and Locally Conformally Kähler Geometry**, Geometry and TACoS, online.
- May 2025 **Complex Hermitian Geometry**, Université Angers, Angers; France.
- Apr. 2025 **Families of Kähler spaces**, CIRM, Luminy; France.
- Feb. 2025 **Workshop KRIS: On the Hamilton-Tian conjecture**, Workshop Singular Kähler-Ricci flows (KRIS), Toulouse; France.
- Jul. 2024 **C.I.M.E. School Calabi-Yau Varieties**, Summer school, Cetraro; Italy.
- Jun. 2024 **Flows and Variational Methods in Complex and Riemannian Geometry**, Summer school, CRM, Montreal; Canada.
- Apr. 2024 **Workshop Paraplui Angers**, Workshop on non-Kähler Geometry, Angers; France.
- Jun. 2023 **Advances in special Kähler metrics**, Summer School and Worskhop, Le Croisic; France.
- 2021 **33rd Brazilian Mathematics Colloquium**, *online*, IMPA.

2019 **32nd Brazilian Mathematics Colloquium**, IMPA, Rio de Janeiro, Brazil.

Extra Courses

May 2023 **Introduction au programme des modèles minimaux.** at Master Class M2 Géométrie algébrique et complexe : Nancy, 3 days mini-course, Professor: Enrica Floris (Poitiers)

May 2023 **Introduction à L'hyperbolicité des variétés complexes.**, at Master Class M2 Géométrie algébrique et complexe : Nancy, 3 days mini-course, Professor: Erwan Rousseau (Brest)

Teaching Experience

2026–1 **Teaching Assistant**, Université de Toulouse, France. Course: *Functions and Calculus 1*

2026–1 **Teaching Assistant**, Université de Toulouse, France. Course: *Integration and series* (practical classes)

2025–1 **Teaching Assistant**, Université de Toulouse, France. Course: *Functions and Calculus 1*

2025–1 **Teaching Assistant**, Université de Toulouse, France. Course: *Introduction to real analysis* (practical classes)

2022–1 **Teaching Assistant**, University of São Paulo, Brazil. Course: *Calculus 1 for Economics*, Lecturer: Mikhailo Dokuchaev

2019/2021 **Private Classes**, São Paulo, Brazil. Courses: *Introduction to Differential Geometry (3 students) (2021)*, *Real Analysis (1 student) (2019)*.

Outreach

Jun. 2025 **BusMath: speed-meeting**, Toulouse, France

Description: PhDs and professors have a series of short discussions with multiple small groups of students on their first year of a local high school. The goal is to answer questions about their academic path, job, research and mathematics in general.

Monographs

2023 **The Hermitian Calabi-Yau Theorem** (*24 pages in English*), Master II Thesis, Toulouse III - Paul Sabatier, Under supervision of Prof. Vincent Guedj

2021 **A Study of Geodesics, the shortest path between Finsler Geometry and Mechanics** (*51 pages in Portuguese*), Undergraduate Thesis, University of São Paulo, Under supervision of Prof. Marcos M. Alexandrino

Academic Services

2019 – 2020 **Organizer of the S4 Group**, *A Student runned academic group*, IME-USP, University of São Paulo, Brazil.

weekly seminars through 4 semesters.

Other informations

Related Activities

2025 **Reading seminar on Kähler-Ricci flow**, *online*

2024 **Reading seminar on Cheeger-Colding-Tian Theory**, IMT, Université de Toulouse, France

Prizes

2016 Silver medal at the **Rio de Janeiro Mathematics Olympiad (OMERJ)**

2013 Silver medal at the **Rio de Janeiro Mathematics Olympiad (OMERJ)**

Technical Skills

L^AT_EX Advanced

Python Basic

Mathematica Basic

Languages

Portuguese Native
English Fluent
French Intermediate