Lucca Borges Prado

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Education

2022- PhD Candidate in Mathematics, Stanford. Advisor: Lenya Ryzhik.
2018-2022 BS in Mathematics, BA in Economics, University of Chicago.

Interests

Reaction-diffusion equations, interacting particle systems, knowledge diffusion models.

Conferences attended

2025 Emerging Connections between Reaction-Diffusion, Branching Processes, and Biology - BIRS, Canada.
Presented a poster on 2-dimensional CDF-like travelling waves for the Fisher-KPP equation.
2024 Mathematical Modeling of Biological Phenomena - IMSI, Chicago.
Presented a poster on the existence of pulsating waves in a knowledge diffusion model.

Relevant Coursework

At Stanford,
Partial Differential Equations: Elliptic Regularity (Math 256A), Fluid Dynamics (Math 256B), PDE of Applied Mathematics (Math 220A), Numerical Solutions of PDE (Math 226), Topics in PDE - Mean Field Games (Math 272); Introduction to Stochastic Differential Equations (Math 236); Probability (Math 230A, B); Mathematical Methods of Imaging (Math 221B).

At UChicago,
Elliptic Regularity (Math 37609); Brownian Motion and Stochastic Calculus (Math 38511); Analysis (Math 31200-31300).

Experience

2025 SURIM - Stanford Undergraduate Research Institute in Mathematics
Mentored a group of three undergraduate students over the summer for a project on optimal control and viscosity solutions of partial differential equations.
2024 SURIM - Stanford Undergraduate Research Institute in Mathematics
Mentored a group of three undergraduate students over the summer for a project on optimal transport.
2021 UChicago Math REU
Wrote an expository paper on the existence of a classical solution to a mean field game.
2020 UChicago Math REU
Wrote an expository paper on differential games and viscosity solutions.

Teaching

At Stanford,
(Fall 2025) Math 220A - Partial Differential Equations of Applied Mathematics (CA)
(Spring 2025) Math 53 - Differential Equations (TA)
(Winter 2025) Math 131P - Partial Differential Equations (CA)
(Spring 2024) Math 171 - Fundamental Concepts of Analysis (CA),
(Winter 2024) Math 52 - Integral Calculus of Several Variables (TA),
(Spring 2023) Math 104 - Applied Matrix Theory (CA),
(Fall 2022) Math 19 - Calculus (CA).

Languages

Portuguese (native), English (bilingual), Spanish (conversational), Italian (conversational), German (beginner).