Leticia Mattos Da Silva

Massachusetts Institute of Technology
Room 32-D475A
32 Vassar Street, Cambridge, MA 02139

Email: leticiam@mit.edu
Website: lmattos.com

Education

Massachusetts Institute of Technology — Sept. 2021 – *present*
Ph.D. in Computer Science, advised by Justin Solomon

Massachusetts Institute of Technology — June 2023
S.M. in Computer Science, advised by Justin Solomon

University of California, Los Angeles — March 2021
B.S. in Mathematics *cum laude*

Research Positions

Guest Researcher — Aug. 2024 – March 2025
Flatiron Institute, Simons Foundation, New York, NY

Pre-Doctoral Researcher — May – Aug. 2024
Flatiron Institute, Simons Foundation, New York, NY

Research Scientist Intern — May – Aug. 2022
Adobe Inc., San Jose, CA (Remote)

Research Intern — July – Aug. 2021
Fields Institute for Research in Mathematical Sciences, Toronto, ON (Remote)

Research Intern — July – Aug. 2020
Fields Institute for Research in Mathematical Sciences, Toronto, ON (Remote)

Student Researcher — June – Aug. 2019
SMALL Research Experience for Undergraduates, Williamstown, MA

Honors and Awards

Oberwolfach Leibniz Graduate Student (OWLG) — 2025

MathWorks Engineering Fellowship — 2024

EECS MathWorks Fellowship — 2023

Schwarzman College of Computing Fellowship funded by Google — 2022

Google Lime Scholarship *semi-finalist* — 2022

Distinguished Graduate Fellowship in Electrical Engineering and Computer Science — 2021

Will Rogers Memorial Scholarship — 2021

De Anza Physical Sciences, Mathematics, and Engineering Scholarship — 2017

Publications

3. Through The Looking Glass: Mirror Schrödinger Bridges — 2024
Leticia Mattos Da Silva, Silvia Sellán, Justin Solomon
Under Peer Review

2. A Framework for Solving Parabolic Partial Differential Equations on Discrete Domains — 2024
Leticia Mattos Da Silva, Oded Stein, Justin Solomon
ACM Transactions on Graphics

1. Breaking Good: Fracture Modes for Realtime Destruction — 2022
Silvia Sellán, Jack Luong, **Leticia Mattos Da Silva**, Aravind Ramakrishnan, Yuchuan Yang, Alec Jacobson
ACM Transactions on Graphics

Invited Talks

Title TBC — ~~April 2025~~
Visual Computing Seminar, MIT — *postponed to Fall 2025*

A Framework for Solving Parabolic PDE on Discrete Domains — March 2025
Visgraf Seminar, IMPA — Instituto de Matemática Pura e Aplicada, *Recording*

Tackling Nonlinear and Nonconvex Challenges with Geometric Algorithms — Feb. 2025
Computer Graphics Seminar, ISTA, *hosted by Samara Ren*

Geometric Algorithms, Stochasticity and the Fokker-Planck Equation — Feb. 2025
Oberwolfach Workshop *Mathematical Imaging and Surface Processing*

The Differential Equations Multiverse: From PDE to SDE in Computer Graphics — Nov. 2024
Computational Science & Engineering Community Seminar, MIT

Towards Broader Parabolic PDE Solvers in Computer Graphics — Sept. 2024
PAB Seminar, The University of Edinburgh, *hosted by Amir Vaxman*

An Iterative High-Order Method for PDE on Moving Surfaces — Aug. 2024
Geometric Computing Lab, New York University, *hosted by Daniele Panozzo*

Variational Characterizations of Nonlinear PDE on Geometric Domains — May 2024
The Scientific AI Group, University of Texas at Austin, *hosted by Richard Tsai*

Contributed Talks

A Framework for Solving Parabolic PDE on Discrete Domains — Nov. 2024
31st Annual Fall Workshop on Computational Geometry, Tufts University

A Framework for Solving Parabolic PDE on Discrete Domains — July 2024
SIGGRAPH, Denver, CO

Log of Heat Equation — Nov. 2021
Graduate Women in Course 6 Research Summit, MIT

Fracture Harmonics — May 2021
Women in Math Research Night, University of California, Los Angeles

When Bands Play in Random Matrix Theory — Aug. 2019
Young Mathematicians Conference, Columbus, OH, with Charles Devlin VI

Other Presentations

Convex Relaxation Strategies for Graphics and Geometry Processing — July 2025
Tutorial Course, Eurographics Symposium on Geometry Processing, Bilbao, Spain

Perron's Method for the Landau Equation — Sept. 2024
Poster, ICMS Workshop, Edinburgh, UK

An Iterative High-Order Method for PDE on Moving Surfaces — Aug. 2024
Poster, Flatiron Institute, Simons Foundation, New York, NY

Solving Parabolic PDE with MATLAB — April 2024
Poster, MathWorks Day, MIT

Solving Parabolic PDE on Discrete Domains — March 2024
Poster, ICERM Workshop *PDEs and Geometry: Numerical Aspects*, Brown University

Academic Service

Member of the Graduate Student Advisory Group — Sept. 2024 – *present*
School of Engineering, MIT

Student Mentor for the Graduate Assistance Application Program — Fall 2021, 2022, 2024
EECS Department, MIT

Organizer of Special Session on Graduate Admissions — Aug. 2021, 2023, 2024
Summer Geometry Initiative, MIT

Organizer of Admitted Students' DEI Lunch — March 2024
EECS Department, MIT

Graduate Applications Reviewer — Jan. 2024
EECS Department, MIT

Executive Member of Diversity, Equity, and Inclusion — Jan. 2023 – Dec. 2023
EECS Graduate Student Association, MIT

Volunteer for Graduate Recruitment Effort — Nov. 2023
The Society of Hispanic Engineers (SHPE) National Convention, Salt Lake City, UT

Disability Justice Council Representative — Sept. 2021 – June 2023
Graduate Student Council, MIT

Executive Member of New Student Orientation — Jan. 2022 – Dec. 2022
EECS Graduate Student Association, MIT

Student Volunteer — July 2021
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing (SGP)

Co-organizer of Outreach Program *Noches de Ciencias* — Sept. 2019 – March 2020
Society of Latino Engineers and Scientists, University of California, Los Angeles

Co-organizer of Tutor Training Workshops — Sept. 2017 – June 2018
Math Performance Success Program, De Anza College

Mentoring

Ryan Dong, Undergraduate Researcher, UROP, MIT	Spring 2025
Ayyoob Berhane, Undergraduate Researcher, SuperUROP Scholar, MIT	2024 – 2025 AY
Akshata Tiwari, Undergraduate Researcher, UROP, MIT	Jan. 2024
Francisco Unai Caja López, Summer Geometry Institute Fellow	Summer 2023
Anna Cole Pearcy, Summer Geometry Institute Fellow	Summer 2023
Matheus da Silva Araujo, Summer Geometry Institute Fellow	Summer 2023
Hossam Mohamed Saeed Gize, Summer Geometry Institute Fellow	Summer 2023
Dora Zhao, Graduate Application Mentee, *now at Stanford*	Fall 2022
Olga Guţan, Graduate Application Mentee, *now at CMU*	Fall 2021

Teaching Positions

Teaching Assistant — Fall 2025
Applied Numerical Algorithms, MIT

Teaching Assistant — Summer 2023
Progressive Mesh Compression, Summer Geometry Institute, MIT, *supervised by Paul Kry*

Instructor — Summer 2019, 2020
First-Year Engineering Transition Bridge: Calculus, University of California, Los Angeles

Teaching Assistant — Fall 2019
Introduction to Engineering Disciplines, University of California, Los Angeles

Teaching Assistant — Fall 2016 – Spring 2018
Intermediate Algebra, *Precalculus*, *Integrated Statistics*, De Anza College