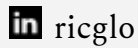# Ricardo Alberto Gloria Picazzo

ricglo | ragloria@cougarnet.uh.edu | ricGLo

Education

University of Houston - PhD in Mathematics

Houston, USA, January 2024 - present

- Advisor: Dr. Yingying Wu
- Research Assistant position: January 2024 - present.
- Topics: Differential Geometry, Discrete Differential Geometry, Machine Learning, Geometry Processing and Discrete Exterior Calculus.

University of Guanajuato / CIMAT* - BS in Mathematical Computing

Guanajuato, Mexico, August 2019 - December 2023

*CIMAT: Mathematics Research Center.

- Cumulative GPA: 9.48 out of 10.

Projects and Research

Summer Geometry Initiative 2023 Fellow - Massachusetts Institute of Technology

Remote - Summer 2023

- Attended hands-on tutorials introducing the theory and practice of geometry processing.
- Worked on research projects led by faculty and research scientists in the discipline:
  - https://summergeometry.org/sgi2023/geometric-surface-characterization/, mentored by Dr. Yingying Wu.
  - Intrinsic Mollification, mentored by Dr. Keenan Crane (still in progress).
- Attended talks and other sessions led by visiting researchers.

Discrete Exterior Calculus - University of Guanajuato

Guanajuato, Mexico - Fall 2022

- Developed a project intended for a Partial Differential Equations course in which an introduction to basic concepts to Discrete Exterior Calculus was presented. Theoretical aspects were widely explained through drawings, figures and examples: https://drive.google.com/file/d/1bpwKQZi465fbRyAsryzEouD2I0XgNH8f/view?usp=share_link\
- Presented project at the *"Student's Junior Seminar"* - University of Guanajuato *(April 26, 2023).*

Big Data Summer Institute 2022 Fellow - University of Michigan

Ann Arbor, USA - Summer 2022

- Participated in the six weeks interdisciplinary training and research SIBS program in biostatistics that introduces undergraduate students to the intersection of big data and human health.
- In addition to Machine Learning research about explainability of Deep Neural Network for Tumor Segmentation, I attended daily lectures on statistics, biostatistics, and big data.

Computational Geometry - University of Guanajuato |

Guanajuato, Mexico - Fall 2021

- Implemented Computational Geometry algorithms animated with manim: Quick Hull, Graham Scan, Art Gallery problem and Voronoi Diagram.
- Click on GitHub and Youtube logos above for code and animations.

Schools and Events

School of Mathematics of Latin America and the Caribbean 2023

Morelia, Mexico - June 26-30

- Attended daily conferences and participated in courses: "Percolation on finite and infinite graphs" and "Applied Mathematics to Data Genomic Analysis"

School of Topology and Differential Geometry 2023 - CIMAT

Guanajuato, Mexico - June 5-9

- Attended daily conferences and participated in courses: "3-manifold Topology" and "Differential Geometry of plane curves".

Service

Research Assistant - University of Houston

January 2024 - present

- Member of Dr. Wu's research group. Currently working on the *Laplace-Beltrami spectra prediction through Deep Learning models* project.

Teacher Assistant - University of Guanajuato / CIMAT

- Graded homework assignments and hosted weekly sessions to discuss homework issues and general questions about the content.
  - Discrete Differential Geometry *(Aug-Dec 2023)*,
  - Partial Differential Equations *(Jan-May 2023)*,
  - Introduction to Computer Science *(Aug-Dec 2022)*,
  - Linear Algebra I *(Jan-May 2022)*,
  - Linear Algebra for Computation *(Aug-Dec 2021)*.

Writing workshop - University of Guanajuato

August - December 2021

- Hosted two sessions per month to practice math writing skills and to learn how to structure and write proofs. Writing workshop was aimed at first year students.

Mathematical Olympiads Coach - Mexican Mathematical Olympiad

- Coach and committee member in Mexican Mathematical Olympiad for Basic Education in Guanajuato *(August 2019 - June 2021)*.

- Coach in the Mexican Mathematical Olympiad in San Luis Potosi *(June 2019 - July 2020).*

Honors and Awards

- Award for the highest grades - University of Guanajuato *(Mar 2020, Dec 2022 and 2023).*
- Academic Scholarship - University of Guanajuato / CIMAT *(January 2020 - Present)*
- Graduated with honors from High School - Tecnológico de Monterrey *(May 2019).*
- High School Excellence Scholarship - Tecnológico de Monterrey *(Aug 2016 - May 2019).*

Skills and Certifications

Software and Programming:
- C/C++, Python, scikit-learn, C#, Pandas, Office, Linux, LaTeX, TensorFlow, Keras, R.
- Web Programming, Data Structures, Algorithms, Machine Learning, Deep Learning, Graphs, String Processing, Computational Geometry, Problem Solving Paradigms.

Languages:
- Spanish (Native), English (C1), French (A1 - A2).

Certifications:
- Competent Communicator, Toastmasters International *(November 2018).*

Extracurricular Activities

Fis-Mat* - Autonomous University of San Luis Potosí
* Fis-Mat is an annual mathematics and physics contest
- Mathematics: 3rd place (2013), 8th place (2014), 10th place (2017), 3rd place (2019).
- Physics: 4th place (2019).

Mathematical Olympiads
- National Stage *(Campeche 2018).*
- Regional Stage: Silver Medal *(remote 2018)*, Honorific Mention *(Ciudad Victoria 2017)*.
- Statal Stage *(San Luis Potosí)*: Gold Medal *(2015-2018)*, Bronze Medal *(2013).*

Musical "El Libro de la Vida" - Tecnológico de Monterrey
San Luis Potosí, México - May 2018

- Played electric guitar. Presented at "Centro Cultural Bicentenario".

Member of LamBot 3478 team - Tecnológico de Monterrey
August 2016 - May 2017

- LamBot 3478 is a team in the FIRST Robotics Competition.
  - April 2017: FIRST Houston Championship *(Houston, USA)*.
  - March 2017: Toluca Regional *(Toluca, Mexico)*.
  - October 2016: Off-season "The Remix in Woodland" *(Houston, USA)*.