



Kevin Silva-Pérez

Student PhD
University of Puerto Rico at Río Piedras
Computational and Statistics Mathematics

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Github - CV

EDUCATION

Degree/Certificate	Institute/Board	CGPA	Year
Student PhD, Computational Mathematics	University of Puerto Rico at Río Piedras	4.0/4.0	2023
MSc. Applied Mathematics (*)	University of Puerto Rico at Mayaguez	3.7/4.0	2021
Bachelor of Mathematics (**)	Universidad de Cartagena	3.6/4.0	2020

(*) **Advisor:** Alejandro Vélez-Santiago, PhD

Dissertation: Difussion over Domains with Ramified Fractal Boundaries.

(**) Book Editor for Laboratory in Differential Calculus with MATLAB (Sponsored by the Science Dean's Office)

WORK EXPERIENCE

- **Teaching Assistant (TA)** Aug 2023 - Present
Professor (MATE 3105) University of Puerto Rico at Río Piedras
- **Teaching Assistant (TA)** Aug 2021 - May 2023
Professor of Pre Calculus I, Pre Calculus II and Calculus University of Puerto Rico at Mayaguez
- **College Board and SAT** Sep 2021 - Dic 2022
Professor in Mathematical Reasoning University of Puerto Rico at Mayaguez
- **Tutor** Aug 2019 - May 2021
Tutor in Calculus I, II and III, Differential Equations and Statistics. Universidad de Cartagena, Colombia

RESEARCH



My research focuses on partial differential equations on domains with fractal boundaries. I also employ functional analysis and classical analysis, semigroup theory, and control theory. I apply these concepts to heat and diffusion problems in biological processes, and I am currently delving into machine learning with PDEs.

PUBLICATIONS: RESEARCH PAPERS

- **K. Silva-Pérez*, A. Vélez-Santiago, Diffusion over ramified domains: solvability and fine regularity.** Dec. 2023
Submitted to Calculus of Variation and PDEs (Germany).

PUBLICATIONS: BOOKS

- **K. Silva-Pérez, R. Arrieta-Montalvo, P. Ortega, B. Johnson, Calculus with MATLAB.** April, 2021
Published by Editorial Universidad de Cartagena.

TALKS AT MATH CONFERENCES

- **Analysis on fractals and networks, and applications** 18 - 22 March, 2024
Diffusion on Bronchial Trees: Construction and Approximation Results (Poster Presentation) CIRM, France
- **XXXIX Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM)** 1 - 2 March, 2024
Humacao, PR
- **Charla, Café y Ciencia** 20 June, 2023
Talk: Hausdorff Measure over Domains with Ramified Fractal Boundaries Universidad de Cartagena, Colombia
- **The 13th AIMS Conference on Dynamical Systems, Differential Equations And Applications** May 31 - June 4, 2023
Talk: Difussion over Bronchial Trees: Fine Regularity (with Dr. Alejandro Vélez-Santiago) Wilmington, NC USA
- **XXXVIII Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM)** 24 - 25 February, 2023
Talk: Diffusion on Bronchial Trees Mayaguez, PR
- **Latinx in the Mathematical Sciences Conference** 7 - 9 July, 2022
UCLA campus, California, USA
- **7th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals** 4 - 8 June, 2022
Preparation for research Cornell University, NY USA

SKILLS

- Programming:** Python, MATLAB, R.
- Basic computer software:** \LaTeX
- Languages:** Spanish - English

MEMBERSHIPS / ORGANIZATIONS

- Society for Advancement of Hispanic / Chicano and Native American in Science** : [SACNAS](#)
- Asociación Estudiantil de Matemáticas UPRRP:** [AeMat](#)
- American Red Cross: VOLUNTEER CONNECTION Puerto Rico:** [Red Cross](#), **Position:** [Information and Planning Team Member \(North\)](#)
- Fractal and PDEs Research Group:** Directed by Alejandro Vélez-Santiago (PhD)

ADDITIONAL COMMENTS

I consider myself a person passionate about teaching and enjoying knowledge, as well as researching, and I am always in favor of my own mental health and that of my students.

- Proficiency in writing research proposals, scientific papers and presentations at academic conferences.
- Ability to keep abreast of the latest developments in the field of mathematics and education.
- Passionate about hiking and healthy living, I always do this together with my partner.

REFERENCES

- **Alejandro Vélez-Santiago, PhD**, (Advisor), email: alejandro.velez2@upr.edu
- **Karen Rios-Soto, PhD**, email: karen.rios3@upr.edu
- **Guihua Gong, PhD**, email: ghgong@gmail.com
- **Heeralal Janwa , PhD**, email: heeralal.janwa@upr.edu