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	2023
MSc. Applied Mathematics (*)	University of Puerto Rico at Mayaguez	3.7	2021
Bachelor of Mathematics (**)	Universidad de Cartagena	3.6	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 Rio 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