# Carlos A. Taveras

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**Research Interests** Schrödinger Operators, Ergodic Theory, Spectral Theory

**Education**

**Rice University**, *Houston, TX* 2026–Present
Ph.D. in Mathematics

**Rice University**, *Houston, TX* 2022–2026
M.S. in Electrical and Computer Engineering
Advisors: César A. Uribe and Santiago Segarra
Thesis: Efficient Path Planning with Soft Homology Constraints

**Carnegie Mellon University**, *Pittsburgh, PA* 2017–2022
B.S. & M.S. in Electrical and Computer Engineering

**Publications**

- **C.A. Taveras**, S. Segarra, C.A. Uribe. *"Gromov-Wasserstein Graph Coarsening"*, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2026, pp. 5961-5965
- Y. Xu, **C.A. Taveras**, L. Beaudrot, C.A. Uribe. *"Identifying Common Backbones of Interactions Underlying Food Webs via Non-Deterministic Alignments"*, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2026, pp. 646-650
- **C.A. Taveras**. *"Efficient Path Planning with Soft Homology Constraints"*, Master's Thesis, Rice University, 2025
- **C.A. Taveras**, S. Segarra, C.A. Uribe. *"Efficient Path Planning with Soft Homology Constraints"*, IEEE Conference on Control Technology and Applications (CCTA) 2024, pp. 657-662

**Presentations**

- *"Gromov-Wasserstein Graph Coarsening"* (Poster), IEEE International Conference on Acoustics, Speech, and Signal Processing, 2026
- *"Identifying Common Backbones of Interactions Underlying Food Webs via Non-Deterministic Alignments"* (Poster), IEEE International Conference on Acoustics, Speech, and Signal Processing, 2026
- *"Gromov-Wasserstein Graph Coarsening"* (Talk), NeurIPS 2025 Workshop: New Perspectives in Graph Machine Learning, 2025
- *"Efficient Path Planning with Soft Homology Constraints"* (Talk), IEEE Conference on Control Technology and Applications, 2024

**Awards**

- Raymond L. Johnson Fellowship 2026
- Ken Kennedy Institute (KKI) Fellowship 2023
- Rice Dean's and ECE STAR Fellowships 2022
- Graduate Education for Minorities (GEM) Fellowship 2021 & 2022

**Conferences and Workshops**

- Oberwolfach AG: From Trees to Bands: Discrete Localization, Unique Continuation, and Propagation 2026
- NeurIPS 2025 Workshop: New Perspectives in Graph Machine Learning 2025
- Texas Colloquium on Distributed Learning 2025
- INFORMS Annual Meeting 2024
- INFORMS Optimization Society Conference 2024
- IEEE Conference on Control Technology and Applications (CCTA) 2024
- ICERM Workshop on Interacting Particle Systems 2024
- Konstanz School of Collective Behavior 2023
- North American School of Information Theory (NASIT) 2023
- INFORMS Annual Meeting 2023
- Texas Colloquium on Distributed Learning 2023

## Teaching

**Instructor**, *Tapia STEM Camps at Rice University* 2026

- Led three week-long sessions of *Techniques of a Pro Mathematician* introducing high school students to undergraduate-level mathematical abstraction and problem solving

**Tutor**, *SpiderSmart River Oaks Learning Center* 2026

- Tutored several primary and secondary school students in various elementary math subjects

**Teaching Assistant and Grader**, *Rice University* 2023–2025

- Led recitations, held office hours, and created/graded homework for *Random Signals (ELEC 303)*, a course on probability and statistics for engineers

**Teaching Assistant and Grader**, *Carnegie Mellon University* 2021–2022

- Led recitations, held office hours, and graded for *Signals and Systems (18-290)*, a course on basic properties of discrete/continuous-time linear and time-invariant systems (operators)
- Held office hours and graded for *Fundamentals of Signal Processing (18-491/691)*, a course on the basic theory and algorithms of discrete-time signal processing

## Employment

- **Research Scientist Intern**, *Adobe Inc.* 2022
- **Data Science Intern**, *Lam Research Corp.* 2021
- **Summer Technology Analyst**, *Goldman Sachs Inc.* 2020
- **Undergraduate Validation Intern**, *Intel Corp.* 2019

## Service

- **Mentor**, *Rice GPS Pathways Program* 2023–2024