Angel D. Cruz

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Vancouver, BC Canada

Education

2021–25[*]   **Ph.D.**, Mathematics, University of British Columbia, *Point Configurations: A Topic in Harmonic Analysis and Geometric Measure Theory.*

2018-20   **M.A.**, Mathematics, San Francisco State University, *A Study of the Erdős Similarity Conjecture on Cantor Type Sets.*

2013-18   **B.Sc.** Applied Mathematics, San Francisco State University, *Positive Semidefinite Rank of Matrices Related to Polytopes*

Publications

Journal Articles

1. **Angel D. Cruz**, Lai, C.-K. & Pramanik, M. Large Sets Avoiding Affine Copies of Infinite Sequences. *Real Analysis Exchange* **48,** 251–270. https://doi.org/10.14321/realanalexch.48.2.1681628520 (2023).

Preprints

1. Cruz, A. D. *Fourier Dimension and Translation Invariant Linear Equations* 2024. arxiv.org/abs/2411.06302.

Conferences

Invited Talks

1. Upcoming. *Fourier Dimension and Translation-Invariant Linear Equations* Joint Mathematics Meeting(Seatlle, WA, USA). Jan. 2025.

2. Upcoming. *Fourier Dimension and Translation-Invariant Linear Equations* Canadian Math Society Winter Meeting(Vancouver, BC, CA). Nov. 2024.

3. *Large Sets Avoiding Affine Copies of Infinite Sequences* Workshop on Harmonic Analysis, Fractals and Tilings(San Francisco, CA, USA). Nov. 2023.

[*]Expected.

Posters

1. *Erdős points and Hausdorff dimension of Cantor sets* Harmonic Analysis and Fractal Sets (Columbus, OH, USA). Mar. 2023.

Short Courses

1. *Spring School: Multilinear Singular and Oscillatory Integrals with Applications* Madison Lectures in Harmonic Analysis (Madison, WI, USA). May 2024.
2. *Sum of Squares* Joint Mathematics Meeting (Baltimore, MD, USA). Jan. 2019.

Attended

1. On the Interface of Geometric Measure Theory and Harmonic Analysis (Banff, AB, CA). June 2024.
2. Bay Area Discrete Math Day (San Francisco, CA, USA). June 2021.
3. Applied Mathematics The Next 50 Years (Seattle, WA, USA). June 2019.
4. AMS: Fall Western Sectional Meeting (San Francisco, CA, USA). Oct. 2018.

Teaching

Professional Development

2024	Instructional Skills Workshop, University of British Columbia, Vancouver.

University of British Columbia

2024-25	Head TA, Differential Calculus (Math 110)
2023-24	Workshop TA, Differential Calculus (Math 110)
Fall 2023	TA/Grader, Introduction to Mathematics (Math 335)
Fall 2022	TA/Grader, Topics in the History of Mathematics (Math 446)
Sum 2022	TA/Grader, Multivariable Calculus (Math 253)
Fall 2022	TA/Grader, Advanced Calculus II (Math 227)
Fall 2021	TA/Grader, Mathematical Proof (Math 220)

San Francisco State University

Spr 2020	Instructor of Note, Prelude to Calculus II (Math 198)
Fall 2019	Instructor of Note, Prelude to Calculus (Math 199)
Spr 2019	Instructor of Note, Prelude to Calculus I (Math 197)

Academic Service

Volunteering

2024   ELMACON, Master of ceremony for several rounds of a math contest.
2023   Science Rendez Vous, Presented parents and children with interactive learning booths about math and computer science concepts.

Professional Experience

2020-21   Assistant Center Director, Mathnasium of Alameda, Alameda, California.
Duties included but were not limited to:

- Oversaw day-to-day operations.

- Administered student assessments, identified learning gaps and developed customized learning plans.

- Built relationships with families to communicate student progress.

- Screen, hired, trained and scheduled employees.