Angel Diosdado Cruz

Vancouver, Canada

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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*

Additional Certificates

2025 Math to Power Industry Graduate, PIMS, Vancouver.
Collaborated with Ioto International to develop tools using signal processing to assess efficacy of parliament. Included professional and technical skills training related to Git, Python, Pandas and Numpy.

2024 Instructional Skills Workshop, University of British Columbia, Vancouver.
An educator enrichment workshop for graduate students. Emphasized communicating with students about learning objectives/goals and writing lesson plans that deliver course material in succinct intervals.

Publications

1. Cruz, A. D. Fourier Dimension and Translation Invariant Linear Equations. arxiv.org/abs/2411.06302 (2024).
2. **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).

Conferences

Invited Talks

1. *Fourier Dimension and Translation-Invariant Linear Equations* Joint Mathematics Meeting(Seatlle, WA, USA). Jan. 2025.
2. *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.

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 Experience

University of British Columbia

Fall 2025	Python Hackathon Development
Sum 2025	Small Class Instructor, Integral Calculus (Math 101)
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)
Sum 2023	Small Class Instructor, Differential Calculus (Math 100)
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)
Fall 2019	Grader, Discrete Mathematics (CSC 230)
Spr 2019	Grader, Exploration and Proof (Math 301)
Spr 2019	Instructor of Note, Prelude to Calculus I (Math 197)

Software Experience

Python, Git, Matlab, R, Haskell, Latex, Microsoft Suite, Google Workspace,

Professional Experience

2020-21 **Assistant Center Director** - Mathnasium of Alameda, Alameda, CA.
Managed daily operations including sales, on-boarding instructional staff, and communicating student progress with parents. Pedagogically, conducted student assessments and developed individualized learning plans.

Volunteering

2024-25 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.
2018 AMS: Fall Western Sectional Meeting (San Francisco, CA, USA), greeted and registered guests. Showed speakers to their rooms. Provided tech support as needed.

References

Professor Malabika Pramanik
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Professor Chun-Kit Lai
Department of Mathematics, San Francisco State University
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Associate Professor Krystal Taylor
Department of Mathematics, The Ohio State University
taylor.2952@osu.edu

Associate Professor of Teaching Seckin Dembiras
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