

Java Darleen Villano

✉ java.villano@utoronto.ca ⓧ javavillano.crd.co

Academic positions

University of Toronto <i>Postdoctoral Fellow</i>	2025-2026
University of Connecticut <i>Graduate Student</i>	2019-2025

Education

University of Connecticut <i>Ph.D. Mathematics</i>	2019-2025
○ Advisers: Reed Solomon and Damir D. Dzhafarov	
○ Dissertation Title: Computable Categoricity, and Topology in Reverse Mathematics	
University of California, Berkeley <i>B.A. Mathematics with Logic Minor</i>	2015-2019

Research interests

Computability theory, computable structure theory, reverse mathematics, Weihrauch complexity, and algorithmic randomness.

Publications

Normality, relativization, and randomness	June 2025
Calvert, W., Gruner, E., Mayordomo, E., Turetsky, D., Villano, J.D.	
<i>Theory of Computing Systems</i> ↗	
Computable categoricity relative to a c.e. degree	May 2025
Villano, J.D.	
<i>Notre Dame Journal of Formal Logic</i> , to appear.	
The Ginsburg–Sands theorem and computability theory	May 2024
Benham, H., DeLapo, A., Dzhafarov, D., Solomon, R., Villano, J.D.	
<i>Advances in Mathematics</i> ↗	

Preprints

Extensions of categoricity relative to a degree	May 2025
Villano, J.D.	
arXiv:2505.15706 ↗	

Teaching experience

Primary Instructor	<i>Toronto, ON</i>
<i>University of Toronto</i>	2025-2026
○ Fall 2025, Winter 2026: MAT133Y (Calculus and Linear Algebra for Commerce), 1 section	
Primary Instructor	<i>Storrs, CT</i>
<i>University of Connecticut</i>	2023-2024
○ Fall 2024: Math 1071Q (Calculus for Business and Economics), 2 sections	
○ Spring 2024: Math 1071Q (Calculus for Business and Economics), 1 section	
○ Fall 2023: Math 1071Q (Calculus for Business and Economics), 2 sections	
○ Spring 2023: Math 1071Q (Calculus for Business and Economics), 2 sections	

Teacher Assistant
University of Connecticut

Storrs, CT
2019-2022, 2025

- **Spring 2025:** Math 2110Q (Multivariable Calculus), 3 sections
- **Fall 2022:** Math 1132Q (Calculus II), 2 sections
- **Spring 2022:** Math 1132Q (Calculus II), 2 sections
- **Fall 2021:** Math 1131Q (Calculus I), 2 sections
- **Spring 2021:** Math 1132Q (Calculus II), 2 sections
- **Fall 2020:** Math 1132Q (Calculus II), 2 sections
- **Spring 2020:** Math 1132Q (Calculus II), 2 sections
- **Fall 2019:** Math 1131Q (Calculus I), 2 sections

Conference invitations

Workshop “Reverse Mathematics: New Paradigms”

Erwin Schrödinger International Institute for Mathematics and Physics
Presentation title: Relativized computable categoricity

Vienna, Austria
Summer 2025

Summer School “Reverse Mathematics: New Paradigms”

Erwin Schrödinger International Institute for Mathematics and Physics

Vienna, Austria
Summer 2025

Logícon 2025

Facultad de Ciencias UNAM

Presentation title: Computable categoricity relative to a degree (online talk)

México City, México
Spring 2025

ASL North American Annual Meeting

New Mexico State University

Presentation title: Computable categoricity relative to a generic degree

Las Cruces, NM
Spring 2025

Dagstuhl Seminar – Weihrauch Complexity: Structuring the Realm of Non-Computability

Schloss Dagstuhl

Wadern, Germany
Spring 2025

South Eastern Logic Symposium

University of Florida

Presentation title: Computable categoricity relative to a degree

Gainesville, FL
Spring 2025

Graduate Research Forum

University of Connecticut

Presentation title: Relativizing computable categoricity

Storrs, CT
Spring 2025

The New England Recursion and Definability Seminar

Dartmouth College

Presentation title: Computable categoricity relative to a c.e. degree

Hanover, NH
Fall 2024

Computable Structure Theory and Interactions

Technische Universität Wien

Presentation title: Computable categoricity relative to a degree

Vienna, Austria
Summer 2024

Joint Mathematics Meeting – AMS Special Session on Computable Mathematics: A Session Dedicated to Martin D. Davis

Presentation title: Computable categoricity relative to a c.e. degree

San Francisco, CA
Spring 2024

A Convergence of Computable Structure Theory, Analysis, and Randomness

Banff International Research Station

Banff, AB
Spring 2023

AMS New England Graduate Student Conference

Brown University

Presentation title: Priority arguments

Providence, RI
Spring 2022

Contributed presentations

ASL North American Annual Meeting <i>Iowa State University</i>	<i>Ames, IA</i> <i>Spring 2024</i>
Presentation title: Computable categoricity relative to a c.e. degree	
AMS New England Graduate Student Conference <i>Brown University</i>	<i>Providence, RI</i> <i>Spring 2024</i>
Presentation titles: Topology in the Reverse Math Zoo; Computable categoricity relative to a c.e. degree	
17th International Conference on Computability, Complexity, and Randomness <i>Nagoya University</i>	<i>Nagoya, Japan</i> <i>Spring 2024</i>
Presentation title: Computable categoricity relative to a c.e. degree	

Conferences and workshops attended

CBMS Conference – Algorithmic Fractal Dimensions <i>Drake University</i>	<i>Des Moines, IA</i> <i>Spring 2024</i>
Computability and Combinatorics Summer School and Conference <i>UConn Hartford</i>	<i>Hartford, CT</i> <i>Spring 2023</i>
ASL Winter Meeting at the Joint Mathematics Meeting	<i>Boston, MA</i> <i>Spring 2023</i>
IMS Graduate Summer School in Logic <i>National University of Singapore</i>	<i>Singapore</i> <i>Summer 2022</i>

Seminar presentations

SIGMA Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Spring 2025</i>
Presentation title: The Scott Isomorphism Theorem	
Online Logic Seminar <i>Southern Illinois University</i>	<i>Online</i> <i>Fall 2024</i>
Presentation title: Computable categoricity relative to a degree	
SIGMA Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Spring 2024</i>
Presentation title: The Ginsburg–Sands theorem and computability theory	
SIGMA Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Spring 2024</i>
Presentation title: Normality and Randomness	
SIGMA Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Fall 2023</i>
Presentation title: Randomness and Hausdorff dimension	
Connecticut Logic Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Fall 2023</i>
Presentation title: Computable categoricity relative to a c.e. degree	
SIGMA Seminar <i>University of Connecticut</i>	<i>Storrs, CT</i> <i>Fall 2022</i>
Presentation title: When does the existence of an isomorphism imply the existence of a computable isomorphism?	

Grants and funding

Summer Doctoral Dissertation Fellowship <i>\$2,000 USD</i>	<i>Summer 2024</i>
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Predoctoral Fellowship
\$7,805 USD

Spring 2024

Outreach

President of the Association of Women in Mathematics
University of Connecticut

*Storrs, CT
2022-2024*

Speaker at the Mathematics Continued Conference
University of Connecticut

*Storrs, CT
Fall 2022*

The Mathematics Continued Conference seeks to give undergraduate students interested in math an opportunity to learn about graduate school and current research done by graduate students and faculty.

Course Tutor for SSS Math Program
University of Connecticut

*Storrs, CT
Summer 2020*

Student Support Services (SSS) is a federally funded program at UConn which serves incoming students who are first-generation to college and/or come from communities underserved in higher education.

Languages

English
Advanced proficiency in reading, writing, and speaking

*Second language learned,
learned in 2003*

Tagalog
Intermediate proficiency in reading, writing, and speaking

Native language