Java Darleen Villano

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

Academic positions

University of Toronto *Postdoctoral Fellow* *2025-2026*

University of Connecticut *Graduate Student* *2019-2025*

Education

University of Connecticut *Ph.D. Mathematics* *2019-2025*

- **Advisers:** Reed Solomon and Damir D. Dzhafarov
- **Dissertation Title:** Computable Categoricity, and Topology in Reverse Mathematics

University of California, Berkeley *B.A. Mathematics with Logic Minor* *2015-2019*

Research interests

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

Publications

Computable categoricity relative to a c.e. degree November 2025

Villano, J.D.

Notre Dame Journal of Formal Logic

Normality, relativization, and randomness June 2025

Calvert, W., Gruner, E., Mayordomo, E., Turetsky, D., Villano, J.D.

Theory of Computing Systems

The Ginsburg–Sands theorem and computability theory May 2024

Benham, H., DeLapo, A., Dzhafarov, D., Solomon, R., Villano, J.D.

Advances in Mathematics

Preprints

Extensions of categoricity relative to a degree May 2025

Villano, J.D.

arXiv:2505.15706

Teaching experience

Primary Instructor *Toronto, ON*
University of Toronto *2025-2026*

- **Fall 2025, Winter 2026:** MAT133Y (Calculus and Linear Algebra for Commerce), 1 section

Primary Instructor *Storrs, CT*
University of Connecticut *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 *Storrs, CT*
University of Connecticut *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

AMS Fall Central Sectional Meeting *St. Louis, MO*
St. Louis University *Fall 2025*
Presentation title: Categorical behavior in the Turing degrees

Workshop "Reverse Mathematics: New Paradigms" *Vienna, Austria*
Erwin Schrödinger International Institute for Mathematics and Physics *Summer 2025*
Presentation title: Relativized computable categoricity

Summer School "Reverse Mathematics: New Paradigms" *Vienna, Austria*
Erwin Schrödinger International Institute for Mathematics and Physics *Summer 2025*

Logicón 2025 *México City, México*
Facultad de Ciencias UNAM *Spring 2025*
Presentation title: Computable categoricity relative to a degree (online talk)

ASL North American Annual Meeting *Las Cruces, NM*
New Mexico State University *Spring 2025*
Presentation title: Computable categoricity relative to a generic degree

Dagstuhl Seminar – Weihrauch Complexity: Structuring the Realm of Non-Computability *Wadern, Germany*
Schloss Dagstuhl *Spring 2025*

South Eastern Logic Symposium *Gainesville, FL*
University of Florida *Spring 2025*
Presentation title: Computable categoricity relative to a degree

Graduate Research Forum *Storrs, CT*
University of Connecticut *Spring 2025*
Presentation title: Relativizing computable categoricity

The New England Recursion and Definability Seminar *Hanover, NH*
Dartmouth College *Fall 2024*
Presentation title: Computable categoricity relative to a c.e. degree

Computable Structure Theory and Interactions *Vienna, Austria*
Technische Universität Wien *Summer 2024*
Presentation title: Computable categoricity relative to a degree

Joint Mathematics Meeting – AMS Special Session on Computable Mathematics: A Session Dedicated to Martin D. Davis *San Francisco, CA*
Spring 2024
Presentation title: Computable categoricity relative to a c.e. degree

A Convergence of Computable Structure Theory, Analysis, and Randomness *Banff, AB*
Banff International Research Station *Spring 2023*

AMS New England Graduate Student Conference *Providence, RI*
Brown University *Spring 2022*

Presentation title: Priority arguments

Contributed presentations

ASL North American Annual Meeting — *Ames, IA*
Iowa State University — *Spring 2024*
Presentation title: Computable categoricity relative to a c.e. degree

AMS New England Graduate Student Conference — *Providence, RI*
Brown University — *Spring 2024*
Presentation titles: Topology in the Reverse Math Zoo; Computable categoricity relative to a c.e. degree

17th International Conference on Computability, Complexity, and Randomness — *Nagoya, Japan*, *Spring 2024*
Nagoya University
Presentation title: Computable categoricity relative to a c.e. degree

Conferences and workshops attended

CBMS Conference – Algorithmic Fractal Dimensions — *Des Moines, IA*
Drake University — *Spring 2024*

Computability and Combinatorics Summer School and Conference — *Hartford, CT*
UConn Hartford — *Spring 2023*

ASL Winter Meeting at the Joint Mathematics Meeting — *Boston, MA*, *Spring 2023*

IMS Graduate Summer School in Logic — *Singapore*
National University of Singapore — *Summer 2022*

Seminar presentations

Logic Seminar — *Waterloo, ON*
University of Waterloo — *Fall 2025*
Presentation title: Relativizing computable categoricity

SIGMA Seminar — *Storrs, CT*
University of Connecticut — *Spring 2025*
Presentation title: The Scott Isomorphism Theorem

Online Logic Seminar — *Online*
Southern Illinois University — *Fall 2024*
Presentation title: Computable categoricity relative to a degree

SIGMA Seminar — *Storrs, CT*
University of Connecticut — *Spring 2024*
Presentation title: The Ginsburg–Sands theorem and computability theory

SIGMA Seminar — *Storrs, CT*
University of Connecticut — *Spring 2024*
Presentation title: Normality and Randomness

SIGMA Seminar — *Storrs, CT*
University of Connecticut — *Fall 2023*
Presentation title: Randomness and Hausdorff dimension

Connecticut Logic Seminar — *Storrs, CT*
University of Connecticut — *Fall 2023*
Presentation title: Computable categoricity relative to a c.e. degree

SIGMA Seminar — *Storrs, CT*
University of Connecticut — *Fall 2022*
Presentation title: When does the existence of an isomorphism imply the existence of a computable isomorphism?

Grants and funding

Summer Doctoral Dissertation Fellowship *Summer 2024*
$2,000 USD

Predoctoral Fellowship
$7,805 USD *Spring 2024*

Outreach

President of the Association of Women in Mathematics *Storrs, CT*
University of Connecticut *2022-2024*

Speaker at the Mathematics Continued Conference *Storrs, CT*
University of Connecticut *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 *Storrs, CT*
University of Connecticut *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 *Second language learned, learned in 2003*
Advanced proficiency in reading, writing, and speaking

Tagalog *Native language*
Intermediate proficiency in reading, writing, and speaking