

# Daniel Gonzalez Cedre

MATHEMATICIAN · COMPUTER SCIENTIST

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## Education

### University of Notre Dame

PH.D. IN COMPUTER SCIENCE

- Working on temporal graph mining and rule-based graph transformations with interests in applied category theory
- Recipient of the Dean's Graduate Fellowship
- Graduate Student Recruitment Representative
- Advised by Tim Weninger

Jun 2019 — Present

Notre Dame, IN, USA

### Florida State University

M.SC. IN MATHEMATICS

- Concentration in Financial Mathematics
- Recipient of the Dean's Graduate Scholarship

Aug 2017 — May 2019

Tallahassee, FL, USA

### Florida International University

B.SC. IN MATHEMATICS · *cum laude*

B.SC. IN COMPUTER SCIENCE · *cum laude*

- McNair Scholar, 12<sup>th</sup> cohort
- Recipient of the National Hispanic Scholarship
- Recipient of the Florida Bright Futures Academic Scholarship

Aug 2012 — May 2016

Miami, FL, USA

### Miami-Dade College

A.A. IN MATHEMATICS · *magna cum laude*

- Dual Enrollment through the School for Advanced Studies at Wolfson
- AP Scholar with Distinction
- National Hispanic Scholar

Jun 2010 — Apr 2012

Miami, FL, USA

## Internships & Projects

### Intern Research Scientist

LAWRENCE LIVERMORE NATIONAL LAB

- Advised by Grant Boquet and Timothy La Fond
- Performed Bayesian inference on vertex-replacement graph grammars
- Worked to disentangle CNRG from its hierarchical-clustering-based priors

Jun 2021 — Aug 2021

Livermore, CA, USA

### Intern Research Scientist

LAWRENCE LIVERMORE NATIONAL LAB

- Advised by Grant Boquet and Timothy La Fond
- Modeled temporal graphs with hidden Markov models
- Modified a vertex-replacement graph grammar to incorporate hidden Markov states
- Evaluated the quality of generated temporal graphs using standard graph comparison metrics

Nov 2020 — Feb 2021

Livermore, CA, USA

### Contactless Fingerprint Collection

COMPUTER VISION RESEARCH LAB @ NOTRE DAME

- Advised by Adam Czajka in collaboration with Aidan Draper
- Sponsored by West Virginia University

Jun 2019 — Jan 2020

Notre Dame, IN, USA

### PURE Math Research Program

UNIVERSITY OF HAWAII AT HILO

- Advised by Roberto Pelayo and Brian Wissman
- Investigating the properties of monotone catenary degree in numerical monoids

Jun 2015 — Jul 2015

Hilo, HI, USA

### Programming Team Member

FLORIDA INTERNATIONAL UNIVERSITY

- Competed at ICPC 2013
- Competed at Southeastern Regionals in 2014

Aug 2013 — Jan 2015

Miami, FL, USA

## Publications & Preprints

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- 2022**     **The Infinity Mirror Test for Graph Models** · TKDE  
Satyaki Sikdar · Daniel Gonzalez Cedre · Trenton W. Ford · Tim Weninger
- 2021**     **Joint Subgraph-to-Subgraph Transitions** · WSDM  
Justus Hibshman · Daniel Gonzalez Cedre · Satyaki Sikdar · Tim Weninger
- 2015**     **Monotone Catenary Degree in Numerical Monoids** · arXiv  
Daniel Gonzalez Cedre · Cameron Wright · Jenna Zomback

## Talks & Lectures

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- 2021**     **Mining Temporal Hypergraphs with Graph Grammars** · Invited guest lecture  
Rose-Hulman Institute of Technology
- 2020**     **The Infinity Mirror Test for Graph Generators** · Full talk  
SIAM Network Science
- 2020**     **The Infinity Mirror Test for Graph Generators** · Poster presentation  
ND CSE 14<sup>th</sup> Annual Poster Conference
- 2015**     **Monotone Catenary Degree in Numerical Monoids** · Poster presentation  
FIU McNair Scholars Research Conference

## Teaching Experience

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### Instructor of Record

University of Notre Dame

DISCRETE MATH

Spring 2022

- Designed every aspect of the course
- Planned and delivered lectures three times per week
- Held optional weekly 3.5-hour-long recitation sections for the students
- Created and graded weekly problem sets, two midterm exams, and a final exam
- Performed all duties without the help of a TA for a class of 26 students
- Held 3 office hours per week

### Graduate Student Lecturer

University of Notre Dame

CSE DISCERNMENT LECTURES

Fall 2020

- Delivered a series of three virtual lectures to prospective engineering freshmen
- Designed a computer vision-based learning activity for the students
- Guided students through group activities, showing them a variety of interesting topics in computer science

### Recitation Instructor

Florida State University

DISCRETE MATH

Spring 2019

- Delivered weekly recitation lectures to two sections of students
- Held office hours, proctored weekly quizzes, and graded assignments

### Instructor of Record

Florida State University

PRECALCULUS ALGEBRA

Fall 2018

- Planned and delivered lectures three times per week
- Held office hours and proctored quizzes and exams

### Graduate Teaching Assistant

University of Notre Dame

DISCRETE MATH · DATA STRUCTURES

Fall 2019 — Spring 2020

- Graded assignments and held office hours

### Graduate Teaching Assistant

Florida State University

BUSINESS CALCULUS · PRECALCULUS ALGEBRA · TRIGONOMETRY · FINITE MATH · LIBERAL ARTS MATH

Fall 2017 — Fall 2018

- Proctored quizzes and exams

### Undergraduate Learning Assistant

Florida International University

GRAPH THEORY · INTRO TO ADVANCED MATH · CALCULUS 2 · CALCULUS 1 · DISCRETE MATH · FINITE MATH · COLLEGE ALGEBRA

Spring 2013 — Summer 2017

- Held recitation sections and office hours
- Assisted professors with in-class duties
- Graded assignments