Daniel **Gonzalez Cedre**

MATHEMATICIAN · COMPUTER SCIENTIST

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Education

University of Notre Dame
PH.D. IN COMPUTER SCIENCE
Jun 2019 — Present
Notre Dame, IN, USA

- 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

Florida State University
M.SC. IN MATHEMATICS
Aug 2017 — May 2019
Tallahassee, FL, USA

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

Florida International University
B.SC. IN MATHEMATICS · *cum laude*
B.SC. IN COMPUTER SCIENCE · *cum laude*
Aug 2012 — May 2016
Miami, FL, USA

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

Miami-Dade College
A.A. IN MATHEMATICS · *magna cum laude*
Jun 2010 — Apr 2012
Miami, FL, USA

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

Internships & Projects

Intern Research Scientist
LAWRENCE LIVERMORE NATIONAL LAB
Jun 2021 — Aug 2021
Livermore, CA, USA

- 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

Intern Research Scientist
LAWRENCE LIVERMORE NATIONAL LAB
Nov 2020 — Feb 2021
Livermore, CA, USA

- 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

Contactless Fingerprint Collection
COMPUTER VISION RESEARCH LAB @ NOTRE DAME
Jun 2019 — Jan 2020
Notre Dame, IN, USA

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

PURE Math Research Program
UNIVERSITY OF HAWAII AT HILO
Jun 2015 — Jul 2015
Hilo, HI, USA

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

Programming Team Member
FLORIDA INTERNATIONAL UNIVERSITY
Aug 2013 — Jan 2015
Miami, FL, USA

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

Publications & Preprints

2022   **Motif Minig: Finding and Summarizing Remixed Image Content** · arXiv
William Theisen · Daniel Gonzalez Cedre · Zachariah Carmichael · Daniel Moreira · Tim Weninger · Walter Scheirer

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

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 14th Annual Poster Conference
2015   **Monotone Catenary Degree in Numerical Monoids** · Poster presentation · FIU McNair Scholars Research Conference

Teaching Experience

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