Daniel **Gonzalez Cedre**

Mathematician · Computer Scientist

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Education

University of Notre Dame
Jun 2019 – Present

Ph.D. in Computer Science — *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
Aug 2017 – May 2019

M.Sc. in Mathematics — *Tallahassee, FL, USA*

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

Florida International University
Aug 2012 – May 2016

B.Sc. in Mathematics · *cum laude* — *Miami, FL, USA*

B.Sc. in Computer Science · *cum laude*

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

Miami-Dade College
Jun 2010 – Apr 2012

A.A. in Mathematics · *magna cum laude* — *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
May 2022 – Aug 2022

Lawrence Livermore National Lab — *Livermore, CA, USA*

- Advised by Grant Boquet and Timothy La Fond
- Developed a dynamic vertex-replacement graph grammar based on CNRG

Intern Research Scientist
Jun 2021 – Aug 2021

Lawrence Livermore National Lab — *Livermore, CA, USA*

- Advised by Grant Boquet and Timothy La Fond
- Worked to find optimal dendrogram decompositions for vertex-replacement graph grammars

Intern Research Scientist
Nov 2020 – Feb 2021

Lawrence Livermore National Lab — *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
Jun 2019 – Jan 2020

Computer Vision Research Lab at Notre Dame — *Notre Dame, IN, USA*

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

PURE Math Research Program
Jun 2015 – Jul 2015

University of Hawaii at Hilo — *Hilo, HI, USA*

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

Publications & Preprints

2023 **Motif Mining: Finding and Summarizing Remixed Image Content** · WACV
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

2022 **Undergraduate Engineering Discernment Lecture** · Invited guest lecture · University of Notre Dame

2021 **Mining Temporal Hypergraphs with Graph Grammars** · Invited guest lecture · Rose-Hulman Institute of Technology

2020 **Undergraduate Engineering Discernment Lecture** · Invited guest lecture · University of Notre Dame

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

Service

Reviewer · Transactions on Knowledge Data and Engineering

Reviewer · Journal of Combinatorial Optimization

Reviewer · Web Search and Data Mining

Reviewer · International Conference on Autonomous Systems

Teaching Experience

Instructor of Record
University of Notre Dame
Discrete Mathematics
Spring 2023

- TBD

Co-organizer
University of Notre Dame
Graph Theory Directed Reading
Fall 2022

- Created weekly assignments for an undergraduate student on various topics in Graph Theory
- Co-advised and lectured in collaboration with Justus Hibshman

Instructor of Record
University of Notre Dame
Discrete Mathematics
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, which were always well-attended
- Created and graded weekly problem sets, two midterm exams, and a final exam
- Held 3 office hours per week in addition to the recitation sections
- Performed all duties without the help of a TA for a class of 26 students

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

Teaching Assistance

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 Adv. Math · Calculus 1 & 2 · Discrete Math · Finite Math · College Algebra
Spring 2013 – Summer 2017

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