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 Deans' 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.

May 2022 – Aug. 2022
Livermore, CA, USA

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

Intern Research Scientist
LAWRENCE LIVERMORE NATIONAL LAB.

Jun. 2021 – Aug. 2021
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
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. AT 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

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 · TKDE: Transactions on Knowledge Data and Engineering

Reviewer · JoCO: Journal of Combinatorial Optimization

Reviewer · WSDM: Web Search and Data Mining

Reviewer · ISAC: 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