

Daniel Gonzalez Cedre

MATHEMATICIAN · COMPUTER SCIENTIST

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Education

University of Notre Dame

PHD COMPUTER SCIENCE · *in progress*

MS COMPUTER SCIENCE

- Recipient of the Deans' Graduate Fellowship
- Graduate Student Recruitment Representative
- Advised by Tim Weninger

Jun. 2019 – Present
Notre Dame, IN, USA

Florida State University

MS MATHEMATICS

- Recipient of the Dean's Graduate Scholarship

Aug. 2017 – May 2019
Tallahassee, FL, USA

Florida International University

BS MATHEMATICS · *cum laude*

BS COMPUTER SCIENCE · *cum laude*

- McNair Scholar, 12th 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

AA 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 & Collaborations

Data Scientist

DELOITTE · AI CENTER FOR EXCELLENCE

- Worked to develop a grammar-based explainer for graph neural networks
- Advised by Sanmitra Bhattacharya and Salvador Aguiñaga

May 2023 – Aug. 2023
South Bend, IN, USA

Research Scientist

LAWRENCE LIVERMORE NATIONAL LAB.

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

May 2022 – Aug. 2022
Livermore, CA, USA

Research Scientist

LAWRENCE LIVERMORE NATIONAL LAB.

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

Jun. 2021 – Aug. 2021
Livermore, CA, USA

Research Scientist

LAWRENCE LIVERMORE NATIONAL LAB.

- Modeled temporal graphs with hidden Markov models and vertex-replacement graph grammars
- Advised by Grant Boquet and Timothy La Fond

Nov. 2020 – Feb. 2021
Livermore, CA, USA

Contactless Fingerprint Collection

UNIVERSITY OF NOTRE DAME · COMPUTER VISION RESEARCH LAB.

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

Jun. 2019 – Jan. 2020
Notre Dame, IN, USA

PURE Math Research Program

UNIVERSITY OF HAWAII AT HILO

- Investigating the properties of monotone catenary degree in numerical monoids
- Advised by Roberto Pelayo and Brian Wissman in collaboration with Cameron J. Wright and Jenna Zomback

Jun. 2015 – Jul. 2015
Hilo, HI, USA

Publications & Preprints

2024	This Probably Looks <i>Exactly</i> Like That: An Invertible Prototypical Neural Network · ECCV Zachariah Carmichael* · Timothy Redgrave* · <i>Daniel Gonzalez Cedre</i> * · Walter Scheirer	*EQUAL CONTRIBUTION
2023	Dynamic Vertex Replacement Grammars · ARXIV <i>Daniel Gonzalez Cedre</i> · Justus Isaiah Hibshman · Timothy La Fond · Grant Boquet · Tim Weninger	
2023	Motif Mining: Finding and Summarizing Remixed Image Content · WACV William Theisen · <i>Daniel Gonzalez Cedre</i> · Zachariah Carmichael · Daniel Moreira · Tim Weninger · Walter Scheirer	
2022	The Infinity Mirror Test for Graph Models · TKDE Satyaki Sikdar · <i>Daniel Gonzalez Cedre</i> · Trenton W. Ford · Tim Weninger	
2021	Temporal Egonet Subgraph Transitions · ARXIV <i>Daniel Gonzalez Cedre</i> · Sophia Abraham · Lucas Parzianello · Eric Tsai	
2021	Joint Subgraph-to-Subgraph Transitions · WSDM Justus Isaiah Hibshman · <i>Daniel Gonzalez Cedre</i> * · Satyaki Sikdar* · Tim Weninger	*EQUAL CONTRIBUTION
2015	Monotone Catenary Degree in Numerical Monoids · ARXIV <i>Daniel Gonzalez Cedre</i> · Cameron Wright · Jenna Zomback	

Talks & Lectures

2023	Explaining Anomalies in Graphs with Grammars · <i>Internship talk</i> · Deloitte	
2023	A Transformational Approach to Graph Learning · <i>PhD candidacy</i> · University of Notre Dame	
2023	Undergraduate Engineering Discernment Lecture · <i>Invited guest lecture</i> · University of Notre Dame	
2022	Undergraduate Engineering Discernment Lecture · <i>Invited guest lecture</i> · University of Notre Dame	
2021	Mining Temporal Hypergraphs with Graph Grammars · <i>Invited guest lecture</i> · Rose-Hulman Institute of Technology	
2020	Undergraduate Engineering Discernment Lecture · <i>Invited guest lecture</i> · University of Notre Dame	
2020	The Infinity Mirror Test for Graph Generators · <i>Full talk</i> · SIAM Network Science	
2020	The Infinity Mirror Test for Graph Generators · <i>Poster presentation</i> · ND CSE 14 th Annual Poster Conference	
2015	Monotone Catenary Degree in Numerical Monoids · <i>Poster presentation</i> · FIU McNair Scholars Research Conference	

Awards & Honors

2024	Outstanding Instructor Honorable Mention · Graduate Student Government · University of Notre Dame	
2024	Outstanding Graduate Student Teaching Award · Kaneb Center for Teaching & the Graduate School · University of Notre Dame	
2024	Kaneb Outstanding Instructor of Record · Computer Science & Engineering · University of Notre Dame	
2024	CSE Outstanding TA Award · Computer Science & Engineering · University of Notre Dame	
2016	GEM University Fellow · National GEM Consortium · University of Chicago	
2016	Outstanding Achievement in Mathematics · College of Arts, Sciences & Education · Florida International University	
2015	2nd Place Poster Presentation · McNair Scholars Research Conference · Florida International University	
2014	3rd Place Award for "Pancake Simulator" · HackFSU Hack-a-thon · Florida State University	

Teaching Experience

Instructor of Record PRINCIPLES OF COMPUTING · CSE 1000I • TO BE DETERMINED	University of Notre Dame Fall 2024
Instructor of Record DISCRETE MATHEMATICS · CSE 20110 • Designed every aspect of the course • Planned and delivered three 50-minute lectures per week • Created two midterms, one final, and weekly problem sets based on lectures • Wrote solutions to all assignments • Curated custom lecture notes • Held 4 hours of optional problem-solving recitations per week • Held one-on-one and small-group office hours averaging 8 hours per week • Managed 4 undergraduate TAs and 1 graduate TA who assisted with grading and office hours	University of Notre Dame Spring 2024

Instructor of Record

DISCRETE MATHEMATICS · CSE 20110

University of Notre Dame
Fall 2023

- Designed every aspect of the course
- Planned and delivered two 75-minute lectures per week
- Created two midterms, one final, and weekly problem sets based on lectures
- Wrote solutions to all assignments
- Curated custom lecture notes
- Held 4 hours of optional problem-solving recitations per week
- Held one-on-one and small-group office hours averaging 20 hours per week
- Managed 10 undergraduate TAs and 1 graduate TA who primarily assisted with grading

Instructor and Coach

CSE SUMMER ENRICHMENT PROGRAM

University of Notre Dame
Summer 2023

- Planned and delivered one 75-minute lecture per week
- Coordinated topics that included recursion, finite combinatorics, graph algorithms, and logic
- Met with students to help them with their summer research and provide guidance
- Collaborated with William Theisen

Instructor of Record

DISCRETE MATHEMATICS · CSE 20110

University of Notre Dame
Spring 2023

- Designed every aspect of the course
- Planned and delivered three 50-minute lectures per week
- Created and graded weekly problem sets, two midterm exams, and a final exam
- Wrote solutions to all assignments
- Wrote custom lecture notes
- Held 4 hours of optional problem-solving recitations per week
- Held 4 office hours per week

Co-organizer

GRAPH THEORY · DIRECTED READING

University of Notre Dame
Fall 2022

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

Instructor of Record

DISCRETE MATHEMATICS · CSE 20110

University of Notre Dame
Spring 2022

- Designed every aspect of the course
- Planned and delivered three 50-minute lectures per week
- Created and graded weekly problem sets, two midterm exams, and a final exam
- Wrote solutions to all assignments
- Held 4 hours of optional problem-solving recitations per week
- Held 3 office hours per week

Recitation Instructor

DISCRETE MATH · MAD 2104

Florida State University
Spring 2019

- Delivered 50-minute recitation lectures to two sections once per week
- Proctored weekly quizzes and graded assignments
- Held 3 office hours per week

Instructor of Record

PRECALCULUS ALGEBRA · MAC 1104

Florida State University
Fall 2018

- Planned and delivered three 50-minute lectures per week
- Proctored quizzes and exams
- Held 3 office hours per week

Teaching Assistance

Graduate Teaching Assistant

DISCRETE MATH · DATA STRUCTURES

University of Notre Dame
Fall 2019 – Spring 2020

- Held three office hours per week
- Graded assignments

Graduate Teaching Assistant

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

- Proctored quizzes and exams

Florida State University

Fall 2017 – Fall 2018

Undergraduate Learning Assistant

GRAPH THEORY · INTRO TO ADV. MATH · CALCULUS I & 2 · DISCRETE MATH · FINITE MATH · COLLEGE ALG.

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

Florida International University

Spring 2013 – Summer 2017

Service

Reviewer · TKDE: Transactions on Knowledge Data and Engineering

Reviewer · JoCO: Journal of Combinatorial Optimization

Reviewer · WSDM: Web Search and Data Mining

Reviewer · ICAS: International Conference on Autonomous Systems