

Daniel Gonzalez Cedre

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Experience

Teaching Assistant Professor

SIEBEL SCHOOL OF COMPUTING AND DATA SCIENCE

University of Illinois Urbana-Champaign

AUG. 2025 — PRESENT

Education

Doctor of Philosophy · Computer Science · *in progress*

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

- "A Transformational Approach to Graph Learning," advised by Tim Weninger

University of Notre Dame

JUN. 2019 — JUL. 2025

Master of Science · Financial Mathematics

DEPARTMENT OF MATHEMATICS

- Advised by Arash Fahim and mentored by Alec Kercheval

Florida State University

AUG. 2017 — MAY 2019

Bachelors of Science · Mathematics · Computer Science · *cum laude*

DEPARTMENT OF MATHEMATICS AND STATISTICS · SCHOOL OF COMPUTING AND INFORMATION SCIENCES

- Mentored by Mirroslav Yotov and George Kafkoulis

Florida Int'l University

AUG. 2012 — MAY 2016

Associate of Arts · Mathematics · *magna cum laude*

SCHOOL FOR ADVANCED STUDIES, WOLFSON CAMPUS

- Dual enrollment through the School for Advanced Studies' Wolfson campus

Miami-Dade College

JUN. 2010 — APR. 2012

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	Department of Computer Science and Engineering	University of Notre Dame
2024	CSE Outstanding TA Award	Department of Computer Science and Engineering	University of Notre Dame
2019	Deans' Graduate Fellowship	The Graduate School	University of Notre Dame
2017	Dean's Scholarship	The Graduate School	Florida State University
2016	GEM University Fellow	National GEM Consortium	University of Chicago
2016	Outstanding Achievement in Mathematics	College of Arts, Sciences, and Education	Florida Int'l University
2015	Second place "Monotone Catenary Degree [...]"	McNair Scholars Research Conference	Florida Int'l University
2014	Third place award for "Pancake Simulator"	HackFSU Hack-a-thon	Florida State University
2015	McNair Scholar, 12 th cohort	McNair Scholars Program	Florida Int'l University
2012	Florida Bright Futures Scholarship	Office of Student Scholarship and Grants	State of Florida
2012	National Hispanic Scholarship	Office of Admissions	Florida Int'l University

Publications & Preprints

2024	This Probably Looks <i>Exactly</i> Like That: An Invertible Prototypical Neural Network · ECCV	Daniel Gonzalez Cedre* · Zachariah Carmichael* · Timothy Redgrave* · Walter Scheirer	*EQUAL CONTRIBUTION
2023	Dynamic Vertex Replacement Grammars · ARXIV	Daniel Gonzalez Cedre · Justus Isaiah Hibshman · Timothy La Fond · Grant Boquet · Tim Weninger	
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	Temporal Egonet Subgraph Transitions · ARXIV	Daniel Gonzalez Cedre · Sophia Abraham · Lucas Parzianello · Eric Tsai	
2021	Joint Subgraph-to-Subgraph Transitions · WSDM	Justus Isaiah Hibshman · Daniel Gonzalez Cedre* · Satyaki Sikdar* · Tim Weninger	*EQUAL CONTRIBUTION
2015	Monotone Catenary Degree in Numerical Monoids · ARXIV	Daniel Gonzalez Cedre · Cameron Wright · Jenna Zomback	

Talks & Lectures

2024	This Probably Looks <i>Exactly</i> Like That	Poster presentation	European Conference on Computer Vision
2024	Undergraduate Engineering Discernment Lecture	Invited guest lecture	University of Notre Dame
2023	Explaining Anomalies in Graphs with Grammars	Internship talk	Deloitte Touche Tohmatsu
2023	A Transformational Approach to Graph Learning	PhD candidacy	University of Notre Dame
2023	Undergraduate Engineering Discernment Lecture	Invited guest lecture	University of Notre Dame
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 14 th Annual Poster Conference
2015	Monotone Catenary Degree in Numerical Monoids	Poster presentation	FIU McNair Scholars Research Conference

Internships & Collaborations

Data Scientist & AI Graph Expert

AI CENTER FOR EXCELLENCE · *Sanmitra Bhattacharya* · *Salvador Aguiñaga*

- Worked to develop a intrinsically-explainable graph neural network based on graph grammars

Deloitte Touche Tohmatsu

MAY 2023 – AUG. 2023

Intern Research Scientist

APPLIED STATISTICS GROUP · *Grant Boquet* · *Timothy La Fond*

- Developed a dynamic vertex-replacement graph grammar
- Worked to find optimal dendrogram decompositions for vertex-replacement graph grammars
- Modeled temporal graphs with hidden Markov models and vertex-replacement graph grammars

Lawrence Livermore Nat'l Laboratory

MULTIPLE INTERNSHIPS

MAY 2022 – AUG. 2022

JUN. 2021 – AUG. 2021

NOV. 2020 – FEB. 2021

Contactless Fingerprint Collection

COMPUTER VISION RESEARCH LAB · *Adam Czajka*

- Collaborated with Aidan Draper; sponsored by West Virginia University

University of Notre Dame

JUN. 2019 – JAN. 2020

PURE Math Research Program

DEPARTMENT OF MATHEMATICS · *Roberto Pelayo* · *Brian Wissman*

- Studied properties of numerical monoids and catenary degree with Cameron J. Wright and Jenna Zomback

University of Hawaii at Hilo

JUN. 2015 – JUL. 2015

Mentorship & Advising

2025 Warrior Scholars Program

Project Mentor & Advisor for 6 Students

University of Notre Dame

2023 CSE Summer Enrichment Program

Coach & Instructor for 20 Students

University of Notre Dame

Teaching

Principles of Computing

INSTRUCTOR OF RECORD · CSE 10001 · 36 STUDENTS

terminal interfaces · shell commands · Python types · functions · iteration · sorting · file parsing · classes · recursion

- Planned and delivered two 75-minute lectures per week
- Wrote and graded two midterm exams
- Created problem sets with solutions and extra credit assignments
- Held four weekly office hours in addition to one-on-one and small-group sessions
- Managed one undergraduate and two graduate teaching assistants who helped with grading and office hours

University of Notre Dame

FALL SEMESTER 2024

Discrete Mathematics

INSTRUCTOR OF RECORD · CSE 20110 · 31 STUDENTS

ZOL · FOL · ZF set theory · algebra · induction · number theory · combinatorics · infinity · abstract algebra · RSA

- Updated and improved previous design for a proof-based course on logic & mathematical foundations
- Continually improved and expanded previous lecture notes
- 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
- Held four hours of optional problem-solving recitations per week
- Held one-on-one and small-group office hours averaging eight hours per week
- Managed four undergraduate and one graduate teaching assistant who helped with grading and office hours

University of Notre Dame

SPRING SEMESTER 2024

Discrete Mathematics

INSTRUCTOR OF RECORD · CSE 20110 · 180 STUDENTS

ZOL · FOL · ZF *set theory · Peano arithmetic · induction · number theory · functions · infinity · abstract algebra*

- Overhauled and improved design for a proof-based course on logic & mathematical foundations
- Began drafting serious lecture notes over the summer and throughout the semester
- 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
- Held four hours of optional problem-solving recitations per week
- Held one-on-one and small-group office hours averaging 20 hours per week
- Managed ten undergraduate and one graduate teaching assistant who helped with grading and office hours

University of Notre Dame

FALL SEMESTER 2023

CSE Summer Enrichment Program

INSTRUCTOR AND COACH · SUMMER LECTURE SERIES · 20 STUDENTS

fundamentals of computer science and discrete math for students lacking background

- Planned and delivered one 75-minute lecture per week
- Met with students to help them with their summer research and provide guidance
- Collaborated with William Theisen

University of Notre Dame

SUMMER SEMESTER 2023

Discrete Mathematics

INSTRUCTOR OF RECORD · CSE 20110 · 21 STUDENTS

FOL · ZF *set theory · recursion · induction · asymptotic analysis · cardinality · number theory · RSA · graph theory*

- Improved previous design of a course on logic, foundations, and proof-writing for computer science majors
- Experimented with coding assignments that complemented course topics and themes
- Updated brief lecture notes throughout the semester
- Planned and delivered three 50-minute lectures per week
- Designed and graded weekly problem sets, two midterm exams, and a final exam
- Wrote solutions to all assignments
- Held four office hours per week
- Held four hours of optional problem-solving recitations per week

University of Notre Dame

SPRING SEMESTER 2023

Graph Theory

CO-ORGANIZER · DIRECTED READING · 1 STUDENT

graph coloring · weisfeiler-lehman · isomorphism · graph duality · flow algorithms · gale-shapley · infinite graphs

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

University of Notre Dame

FALL SEMESTER 2022

Discrete Mathematics

INSTRUCTOR OF RECORD · CSE 20110 · 25 STUDENTS

propositions · FOL · ZF set theory · functions · cardinality · induction · relations · number theory · RSA · graph theory

- Designed from-scratch a course on mathematical foundations and proof-writing for computer science majors
- Wrote brief lecture notes throughout the semester
- 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 four hours of optional problem-solving recitations per week
- Held three office hours per week

University of Notre Dame

SPRING SEMESTER 2022

Discrete Math I

RECITATION INSTRUCTOR · MAD 2104 · 60 STUDENTS

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

Florida State University

SPRING SEMESTER 2019

Precalculus Algebra

INSTRUCTOR OF RECORD · MAC 1104 · 35 STUDENTS

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

Florida State University

FALL SEMESTER 2018

Service

Volunteer **University of Notre Dame** · *Graduate Student Recruitment Representative*
Reviewer **Springer DMKD** · *Data Mining and Knowledge Discovery*
Reviewer **IEEE TKDE** · *Transactions on Knowledge Data and Engineering*
Reviewer **Springer JoCO** · *Journal of Combinatorial Optimization*
Reviewer **ACM WSDM** · *Web Search and Data Mining*
Reviewer **IEEE ICAS** · *International Conference on Autonomous Systems*