Daniel *Gonzalez Cedre*

cedre.dev · *cedre@illinois.edu*

Experience

Teaching Assistant Professor — ***University of Illinois Urbana-Champaign***
SIEBEL SCHOOL OF COMPUTING AND DATA SCIENCE — AUG. 2025 – PRESENT

Education

Doctor of Philosophy · **Computer Science** — ***University of Notre Dame***
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING — JUN. 2018 – JUL. 2025

Master of Science · **Computer Science** — ***University of Notre Dame***
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING — JUN. 2018 – APR. 2022

Master of Science · **Financial Mathematics** — ***Florida State University***
DEPARTMENT OF MATHEMATICS — AUG. 2016 – MAY 2018

Bachelors of Science · **Mathematics** · **Computer Science** · *cum laude* — ***Florida Int'l University***
DEPARTMENT OF MATHEMATICS AND STATISTICS · SCHOOL OF COMPUTING AND INFORMATION SCIENCES — AUG. 2011 – MAY 2015

Associate of Arts · **Mathematics** · *magna cum laude* — ***Miami-Dade College***
SCHOOL FOR ADVANCED STUDIES, WOLFSON CAMPUS — JUN. 2009 – APR. 2011

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 award *"Monotone Catenary Degree [...]"***	*McNair Scholars Research Conference*	*Florida Int'l University*
2014	**Third place award *"Pancake Simulator"***	*HackFSU Hack-a-thon*	*Florida State University*
2015	**McNair Scholar, 12th 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 *Exactly* 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

2025	**Rules and Distributions for Explainable Machine Learning**	*PhD thesis defense*	*University of Notre Dame*
2024	**This Probably Looks *Exactly* 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 oral 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 14th Annual Poster Conference*
2015	**Monotone Catenary Degree in Numerical Monoids**	*Poster presentation*	*FIU McNair Scholars Research Conference*

Internships & Collaborations

Data Scientist & AI Graph Expert — ***Deloitte Touche Tohmatsu***
AI CENTER FOR EXCELLENCE · *Sanmitra Bhattacharya* · *Salvador Aguiñaga* — MAY 2023 – AUG. 2023

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

Intern Research Scientist — ***Lawrence Livermore Nat'l Laboratory***
APPLIED STATISTICS GROUP · *Grant Boquet* · *Timothy La Fond* — MULTIPLE INTERNSHIPS

- Developed a dynamic vertex-replacement graph grammar — MAY 2022 – AUG. 2022
- Worked to find optimal dendrogram decompositions for vertex-replacement graph grammars — JUN. 2021 – AUG. 2021
- Modeled temporal graphs with hidden Markov models and vertex-replacement graph grammars — NOV. 2020 – FEB. 2021

Contactless Fingerprint Collection — ***University of Notre Dame***
COMPUTER VISION RESEARCH LAB · *Adam Czajka* — JUN. 2019 – JAN. 2020

- Collaborated with Aidan Draper; sponsored by West Virginia University

PURE Math Research Program — ***University of Hawaii at Hilo***
DEPARTMENT OF MATHEMATICS · *Roberto Pelayo* · *Brian Wissman* — JUN. 2015 – JUL. 2015

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

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

Discrete Structures — ***University of Illinois Urbana-Champaign***
INSTRUCTOR OF RECORD · CS 173 · 200 STUDENTS — SPRING SEMESTER 2026

Applied Machine Learning — ***University of Illinois Urbana-Champaign***
INSTRUCTOR OF RECORD · CS 441 · 900 STUDENTS — SPRING SEMESTER 2026

Discrete Structures — ***University of Illinois Urbana-Champaign***
INSTRUCTOR OF RECORD · CS 173 · 570 STUDENTS — FALL SEMESTER 2025

Warrior Scholars Program — ***University of Notre Dame***
INSTRUCTOR AND MENTOR · SUMMER OUTREACH PROGRAM · 6 STUDENTS — SUMMER SEMESTER 2025

Principles of Computing — ***University of Notre Dame***
INSTRUCTOR OF RECORD · CSE 10001 · 36 STUDENTS — FALL SEMESTER 2024

- 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

Discrete Mathematics — *University of Notre Dame*

INSTRUCTOR OF RECORD · CSE 20110 · 31 STUDENTS — SPRING SEMESTER 2024

- 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 for 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

Discrete Mathematics — *University of Notre Dame*

INSTRUCTOR OF RECORD · CSE 20110 · 180 STUDENTS — FALL SEMESTER 2023

- 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 for 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

CSE Summer Enrichment Program — *University of Notre Dame*

INSTRUCTOR AND COACH · SUMMER LECTURE SERIES · 20 STUDENTS — SUMMER SEMESTER 2023

- 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

Discrete Mathematics — *University of Notre Dame*

INSTRUCTOR OF RECORD · CSE 20110 · 21 STUDENTS — SPRING SEMESTER 2023

- 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 for all assignments
- Held four office hours per week
- Held four hours of optional problem-solving recitations per week

Graph Theory — *University of Notre Dame*

CO-ORGANIZER · DIRECTED READING · 1 STUDENT — FALL SEMESTER 2022

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

Discrete Mathematics — *University of Notre Dame*

INSTRUCTOR OF RECORD · CSE 20110 · 25 STUDENTS — SPRING SEMESTER 2022

- 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 for all assignments
- Held four hours of optional problem-solving recitations per week
- Held three office hours per week

Discrete Math I — *Florida State University*

RECITATION INSTRUCTOR · MAD 2104 · 60 STUDENTS — SPRING SEMESTER 2019

- Delivered 50-minute recitation lectures to two sections once per week
- Held three office hours per week

Precalculus Algebra — *Florida State University*

INSTRUCTOR OF RECORD · MAC 1104 · 35 STUDENTS — FALL SEMESTER 2018

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

Service

Committee	**University of Illinois Urbana-Champaign**	· *Academic Appeals Committee*
Volunteering	**University of Notre Dame**	· *Graduate Student Recruitment Representative*
Peer Review	**Springer DMKD**	· *Data Mining and Knowledge Discovery*
Peer Review	**Springer JoCO**	· *Journal of Combinatorial Optimization*
Peer Review	**ACM WSDM**	· *Web Search and Data Mining*
Peer Review	**IEEE TKDE**	· *Transactions on Knowledge Data and Engineering*
Peer Review	**IEEE ICAS**	· *International Conference on Autonomous Systems*