

Jake Weber

Baton Rouge, LA | jwebe33@lsu.edu | <https://www.linkedin.com/in/jaweber1/> | <https://JakeWeber97.github.io>

Summary

PhD candidate in Mathematics and MS candidate in Computer Science at Louisiana State University, specializing in structural graph theory, system decomposition, graph algorithms, and optimization. Experienced in cross-functional collaboration, project execution, formalizing complex systems and processes, and implementing streamlined strategies to maximize operational efficiency. Eager to jump into roles as a Research Scientist, Algorithms Engineer, Software Developer, or Project Manager while bringing brains, hustle, and flair.

SELECTED PROJECTS

Classes Between Line Graphs and Claw-free Graphs, Louisiana State University

Spring 2026

- We characterize graph classes using precise decomposition/construction algorithms. We provide tools that describe about 30 classes between the two listed. Compared to prior characterizations of these classes, this approach uses half the number of graph operations, infinite graph classes, and standalone graphs. [\[LINK\]](#)

Social Choice Theory: An Application on Voters of the Associated Press (AP) Top 25 NCAA Football Rankings, Louisiana State University

Spring 2026

- After acquiring voter data, we use Python to clean data, implement a formalization of agreement/dominance, and use graph structures to map the social dynamics of the group. We were able to describe the dynamics' change over a given season, isolate which voters are most influential/or diplomatic, and how this dynamic might affect the post-season seeding. [\[LINK\]](#)

Geauxing Places Blog and Website Development [\[LINK\]](#), Louisiana State University

Fall 2023

LEADERSHIP EXPERIENCE

Sigma Phi Epsilon - Iowa Theta and Louisiana Beta

2015 – Present

Alumni Volunteer Corporation (AVC) Secretary & Undergraduate VP of Finance

- Documented all Chapter Counselor workflows (e.g., working with local and national stakeholders, mentoring chapter leaders and their administration, attending and hosting monthly events) to ensure smooth executive transitions, maintain operational quality, and offer a scalable model for peer chapters.

LSU Math Department: Student Colloquium Committee and GEAUX Orientation

2021 – Present

Board Member & Volunteer

- Coordinated speaker proposals, invitations, marketing, and event logistics for academic presentations from faculty in various math disciplines, increasing faculty/graduate student engagement and research progress. [\[LINK\]](#)
- Launched an HTML website to centralize exam prep resources for 100+ graduate students across all LSU math disciplines; incorporated feedback from students/faculty to ensure product efficacy. [\[LINK\]](#)

WORK EXPERIENCE

Louisiana State University: Baton Rouge, LA

2020 - 2026

Teaching & Supporting Effective Educator Development (SEED) Grant Graduate Assistant

- Focused on nurturing student growth in Calculus 1 by providing feedback through formative assessment methods to reinforce skills learned through in-class instruction and peer collaboration for 40 students. Bolstered communication skills with in-class presentations. Created syllabi, practice group work, study guides, and exams.
- Leveraged and built relationships with ~20 key campus stakeholders across colleges, departments, and offices to boost program awareness and recruitment. Acted as a liaison to the College of Science Communications Committee, maintaining the whole program's 10-page website/website redesign, launching and creating the Geauxing Places Alumni Blog with 10 initial entries, making the website a centralized go-to resource. [\[LINK\]](#)
- Coordinated logistics for biweekly recruitment events; advised on program strategy, mentored current students, and supported the GeauxTeach STEM student organization through ongoing professional guidance. This resulted in higher program satisfaction, increased personal confidence, and improved academic success.

SKILLS & AWARDS

- Languages: Python (Jupyter Notebook, Sage Math, NumPy, Pandas, Keras, TensorFlow), Perl, SMLNJ, Prolog, HTML, Lean, SQL, LaTeX, Mathematica, MatLab, and Maple
- Awards: [LSU Certificate of Teaching Excellence](#), UNI Graduate Assistant First Award, [UNI Purple and Old Gold Meritorious Award](#), [Simons Laufer Mathematics Sciences Institute Graduate Summer School: Formalization in Mathematics](#), LSU Graduate Student Leadership Initiative

EDUCATION

Louisiana State University, Mathematics PhD

(GPA = 3.90)

May 2026

Louisiana State University, Computer Science: Systems Science MS

(GPA = 3.90)

May 2026

Louisiana State University, Mathematics MS

(GPA = 3.90)

Dec 2022

University of Northern Iowa, Mathematics MA

(GPA = 4.00)

May 2020

University of Northern Iowa, Mathematics BA

(GPA = 3.96)

May 2018