

Anthony Schurle

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Research Interests

Graph Theory, Combinatorics, and Theoretical Computer Science

Education

Rice University

B.A. Mathematics & B.S. Computer Science

Houston, Texas

GPA: 3.74/4.00

Aug. 2024 – May 2028

Northland Christian School, Texas

Valedictorian

Aug. 2020 – May 2024

Honors & Awards

Trustee Distinguished Academic Scholarship (\$80,000), Rice University

Apr. 2025

President's Honor Roll, Rice University

Fall 2025

Relevant Coursework

Graduate: General Topology (current)

Undergraduate: Honors Linear Algebra (current), Number Theory (current), Potpourri in Extremal Graph Theory (Diestel) (current), Honors Ordinary Differential Equations, Honors Statistics, Algorithmic Thinking

Independent Study: How To Prove It (Velleman)

Professional Experience

Teaching Assistant | *Algorithmic Thinking (COMP182)*

Jan. 2026 – May 2026

George R. Brown School of Engineering and Computing, Rice University

- Supporting students in algorithm design, asymptotic analysis, and correctness reasoning

Teaching Assistant | *Computational Thinking (COMP140)*

Aug. 2025 – Dec. 2025

George R. Brown School of Engineering and Computing, Rice University

- Led weekly lab sessions for 20+ students and hosted office hours with 100+ student interactions
- Coordinated a campus-wide scavenger hunt event for 200+ attendees featuring A* search algorithm implementation

Projects

Graft (Interactive Graph Theory Sandbox) | *JavaScript, SVG*

- Developed a Desmos-style web application for building and exploring graphs through an intuitive visual interface
- Implemented real-time computation of graph properties (degree sequences, connectivity, bipartiteness, chromatic number)
- Created export functionality for set notation, adjacency matrices, and LaTeX TikZ code
- Designed for students testing constructions, instructors creating examples, and researchers prototyping conjectures

r2a (Disassembler) | *Python, RISC-V*

- Developed a formal specification for RISC-V instruction decoding using decision-tree optimization
- Built a testing pipeline verifying binary equivalence

Epidemiological Transmission Mapping | *Python*

- Modeled bacterial infection spread as a complete weighted directed graph using genetic (Hamming distance) and epidemiological data
- Implemented greedy algorithms to infer a rooted directed minimum spanning tree (RDMST) representing likely transmission pathways

Technical Skills

Languages: Python, C, Java, JavaScript, RISC-V Assembly, x86-64 Assembly

Tools: LaTeX, Git & GitHub, Docker, Linux Shell