

GORDON NOVAK

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EDUCATION

ST. OLAF COLLEGE, Northfield, MN (2023-2027)
Expected B.A. in **Physics, Mathematics, & Computer Science**
Dean's List 2023, 2024, 2025 – (GPA: 4.0/4.0)

WASH. U, St. Louis, IL (Winter 24-25)
Intensive **Electrical Engineering Program**
(GPA: 4.0/4.0)

PROFESSIONAL EXPERIENCE

ST. OLAF RESEARCH PROGRAM, Northfield, MN

Collaborative Undergraduate Research & Inquiry Scholar, May 2025-August 2025

- Conducted research in abstract algebra theory, with a focus on invariant ring skew commutative theory
- Designed and implemented algorithms within the Macaulay2 Computer Algebra System (CAS) for the publishing of a new open-source package to aid in the computation of invariant generators in various rings, submitted in a git pull request to the **InvariantRing** repository.

ST. OLAF COLLEGE, Northfield, MN

Lead Computer Science Teaching Assistant

Sept. 2024 - Current

- Led and coordinated a team of teaching assistants to aid CS courses, ensuring consistent communication and efficient distribution of tasks.
- Worked alongside department head to manage logistics concerning application of TAs and improve strategies for effective mentoring of students.

CODE NINJAS, Edina, MN

Lead Programming Instructor

March 2022 – Aug. 2023

- Maintained leadership role mentoring youth aged 7-14 in computer programming, design, and structure.
- Proactively revised student programs to increase instruction effectiveness for summer programs and year-long course offerings.

RAINBOW TREE CARE, Minnetonka, MN

Licensed Treecare Technician

June 2024 – Sept. 2024

- Trained and MDA licensed to protect ash and elm trees from invasive pests, independently managing injection and treatment. Operated across the greater metropolitan area
- Collaborated with expert arborists to determine appropriate biocide treatment.

YMCA ADVENTURE LABS, Eagan, MN

Event Volunteer Coordinator

July 2020 – June 2023

- Directed communication for all volunteers in 4 annual 1000+ person events, ensuring volunteers arrived on site prepared.
- Trained volunteers and aided in formulating course design & structure.

PROFESSIONAL PROJECTS/PROFICIENCIES

Aurora Borealis Simulation – 2024

Programmed a computer simulation using VPython to visualize the interaction between high-speed charged particles with Earth's magnetosphere.

- Fully interactive model with user interface with physical input parameters.

Intercollegiate Hackathon – 2024

Runner up in 36-hour intercollegiate software development competition.

- Designed and coded a novel HTML & PHP application for students to host a live repository to collaborate, discussions, and upload media.

Technology Proficiencies

- C/C++, Java & JavaScript
- Git
- Low-Level/Assembly
- Databases (PHP, etc.)
- Office Suite (& Excel)
- Macaulay2
- HTML5

Applied Ethical Reasoning Web-Application - 2025

- Developed an interactive website illustrating how insufficient regulation across industries leaves IT departments underfunded and unable to implement robust cybersecurity protections.
- Highlighted vulnerabilities in healthcare, insurance, and hospital systems, demonstrating the risks and consequences of data breaches that are likely to, and have occurred.