Nathaniel K. Green

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Education:

University of Wisconsin - La Crosse — Expected Graduation: May 2025

B.S. Computer Science and B.S. Mathematics

- 3.81 GPA - Dean's List
- Dean's Distinguished Fellowship 2022
- Undergraduate Research and Creativity Committee Grant Recipient Spring 2023

Academic Experience:

Linear Algebra

- Studied matrices, linear transformations, kernel, range, eigenvalues, eigenvectors, markov chains, diagonalization

Graph Theory

- Studied planarity, coloring, eulerian and hamiltonian graphs, digraphs, and various graph traversal algorithms

Software Design III

- Studied search/sort algorithms and wrote classes for data structures like AVL Tree, B+ Tree, Huffman coding (Java)

Introduction to Assembler Programming, C Programming and Computer Organization

- Project-based course focused on programming in MIPS and C, while studying binary, and types of computers

By Summer 2024: Abstract Algebra, Topology, Artificial Intelligence, Computer Architecture, Software Design IV, Structures of Compilers

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Work Experience:

UPS, *Homlen, Wisconsin* — June 2023 - Current

Pre-loader

- Quickly and efficiently load packages into trucks for drivers

UW-La Crosse, *La Crosse, Wisconsin* — January 2023 - July 2023

Undergraduate Research & Creativity Committee Grant Recipient

- Co-wrote research paper proving specific case of the CDTA conjecture (below)
- Proved a general type of matrix is positive semidefinite using minimum polynomial

UW-La Crosse, *La Crosse, Wisconsin* — May 2022 - September 2022

Dean's Distinguished Fellowship Research Fellow, Linear Algebra (CDTA conjecture)

- Identified and addressed next steps in problem, combining advanced linear algebra concepts and Python/Sage programming
- Presented findings multiple times to both peers and faculty

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Skills:

Proficient: Python, Java, Linux/Unix, C, Sage, Assembly (MIPS), Git, LaTeX, MS Office
Novice: SQL, HTML/CSS, Ruby

Publications:

N. K. Green and E. D. Kim. Further techniques on a polynomial positivity question of Collins, Dykema, and Torres-Ayala. *Under review* (2023) [arxiv.org/abs/2307.06311]

Leadership and Activities:

NICA youth mountain bike team coach, Math & Stats club, CODERS, National Honors Society