Nathaniel K. Green

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Education:

University of Wisconsin - La Crosse — September 2021 - May 2025
B.S. Mathematics (Honors) and Computer Science

- 3.83 GPA - Dean's List
- Undergraduate Research and Creativity Laureate 2025
- Undergraduate Research and Creativity Committee Grant Recipient Spring 2023
- Dean's Distinguished Fellowship 2022

Work Experience:

Capital One, *McLean, Virginia* — June 2024 - August 2024
Software Engineer Intern

- Worked within the Enterprise Platforms Technology team to transfer metadata and automate dataset registration
- Used AWS Lambda functions, CloudWatch, Simple Storage Service, Simple Notification Service, DevOps
- Collaborated with teammates using agile development methodology, Jira, and GitHub Enterprise

UW-La Crosse, *La Crosse, Wisconsin* — January 2023 - July 2023
Undergraduate Research & Creativity Committee Grant Recipient

- Co-wrote a research paper proving a specific case of the CDTA conjecture using semidefinite programming

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, optimization, Python
- Presented findings multiple times to both peers and faculty

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Academic Experience:

Operating Systems

- Studied virtual memory, CPU scheduling, threading, synchronization, file systems, cryptography, and built shell (C)

Machine Learning

- Studied linear and logistic regression, classification, neural networks, reinforcement learning, and gradient descent

Software Design IV (Software Engineering)

- Group created appointment booking software using JavaScript, Python (Flask), HTML/CSS, Bootstrap, SQL

Software Design III

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

Linear Algebra

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

Other: Artificial Intelligence, Graph Theory, Intro to Databases, Real Analysis, Structures of Compilers, Topology

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Skills:

Python, Java, AWS, C, JavaScript, SQL, HTML/CSS, Linux/Unix, Git, Assembly (MIPS), Flask, LaTeX, MS Office

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Publications:

N. K. Green and E. D. Kim. Further techniques on a polynomial positivity question of Collins, Dykema, and Torres-Ayala. *Algebra and Discrete Mathematics* (2024) [arxiv.org/abs/2307.06311]

Leadership and Activities: Math & Stats club treasurer, NICA youth mountain bike team coach, CODERS