

Ethan Van Caster

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Education

Iowa State University – B.S. in Computer Engineering
Expected graduation: 2026 | Cumulative GPA: 3.25

Work Experience

Software Engineering Intern – MITRE Corporation (May 2025 – Aug 2025)

- Further developed the GOAT (Global Optimization Algorithmic Toolkit) in MATLAB, integrating multiple evolutionary algorithms (GA, PSO, DA).
- Improved toolkit modularity, runtime performance, and problem-solving capabilities.
- Co-authored a MITRE Technical Report (MTR) documenting GOAT; published with authorship credit.

Software Engineering Intern – MITRE Corporation (May 2024 – Aug 2024)

- Designed a web-based interface for AvL, ASC, RC4000, and RC3000 antenna controllers.
- Supported features including two-star calibration, TLE pointing, and GEO satellite pointing.

Software Engineering Intern – MITRE Corporation (May 2023 – Aug 2023)

- Led development of a geocoding program hosted on Linux with open-source APIs.
- Built a web-based interface with Apache2, HTML, JavaScript, and Python.
- Completed a course on embedded security, including penetration testing.

Software Engineering Intern – MITRE Corporation (May 2022 – Aug 2022)

- Researched amateur satellites and developed a program to identify unencrypted TT&C; data.

Undergraduate Research – Iowa State University (ECpE Dept.) (Fall 2023)

- Implemented and tested k-means² and least squares ML algorithms on MNIST.

Extracurricular

Triangle Fraternity

Member (2022 – Present); Vice President of House Management (2024)

Iowa State University Presidents Leadership Class

Selected to participate (Fall 2022)

Skills

Languages/Frameworks: Java, SpringBoot, Python (Flask), HTML, JavaScript, C, MATLAB, MIPS, Verilog
Systems/Tools: Git, Linux, Windows, Microsoft Teams, Android Studio
Focus Areas: Circuit design, evolutionary algorithms, optimization, embedded security