Jackson Vonderhorst

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EDUCATION

University of Notre Dame | Notre Dame, Indiana   Expected May 2027
Bachelor of Science   *GPA: 3.93*
Major: Computer Science | Supplemental Major: Applied and Computational Mathematics and Statistics
Relevant Courses: Intro to AI, Systems Programming, Data Structures, Computer Architecture, Programming Paradigms, Fundamentals of Computing, Discrete Math, Logic Design, Intro to VFX

EXPERIENCE

University of Notre Dame | Notre Dame, Indiana   May 2025 – Present
AI-Augmented Scientific Visualization Research Assistant
- Integrate and evaluate AI agents with ParaView using tools such as the Model Context Protocol (MCP) and LLM-powered code generation (via OpenAI API keys), enabling direct AI-driven manipulation of 3D scientific models through structured tool calls and natural language interaction. Assess efficiency using CodeBERT code similarity, token usage, execution time, and other performance metrics.

University of Notre Dame Engineering and Science Computing | Notre Dame, Indiana   December 2023 – Present
Engineering and Science Computing Student Worker
- Build, reimage, and deliver technology to university faculty, staff, and students in the Colleges of Engineering and Science.

Sunrise Day Camp | Pearl River, New York   May 2021 – Present
Unit Head
- Supervise camp counselors who support children battling cancer and their siblings in a fun, friendly, and safe environment to provide them with a positive escape from the challenges of living with cancer.

LEADERSHIP AND ACTIVITIES

Notre Dame Domer Rover | Notre Dame, Indiana
Autonomous Code Team   January 2025 – Present
- Build autonomous navigation software in Python using OpenCV for obstacle avoidance and GPS waypoint tracking.
- Compete in the University Rover Challenge, designing Mars-style rovers for international competition.

AI/ML Project Club | Notre Dame, Indiana
Member   August 2025 – Present
- Collaborate with peers to design and implement AI/ML models in a fast-paced, hackathon-style environment.
- Apply concepts in machine learning, data analysis, and model deployment to solve real-world problems.

RELATED COURSEWORK OR PROJECTS

FutureMe Web Application | Personal Project   June 2025
Link: [messagefrompastme.org](#)
- Built a full-stack Flask web app that lets users send emails with optional photos to their future selves, using MongoDB Atlas, Tailwind, and async REST APIs for secure, cloud-native delivery.

Precision Fishing Bot with Multicore CV for Toontown Rewritten | Personal Project   March 2025
- Developed a real-time fishing bot for Toontown Rewritten using PyAutoGUI and OpenCV to detect and cast at fish from screen captures. Used multithreaded template matching and vector-based targeting for faster response times.

Video Overlay Timer Tool | Personal Project   April 2025
- Built a PyQt5 desktop app using VLC and yt-dlp to stream YouTube audio with an on-screen overlay of animated visuals and a countdown timer.

Space Invaders Video Game | Personal Project   December 2023 – March 2024
- Developed a Space Invaders game in Python using Pygame, leveraging object-oriented programming for functionality and problem-solving, while designing all in-game assets through custom pixel art.

SKILLS AND INTERESTS

Technical: Proficient in Python, C, Java, MATLAB, SolidWorks, Flask, MCP, OpenAI API, Excel
Familiar with HTML, CSS, JavaScript, C++, PyAutoGUI, OpenCV, MongoDB, Tailwind CSS, Kotlin, Maya
Interests: Rubik's Cubes, Volunteering, Robotics, The Bills, π, Pickleball, Intramural Sports, Poker, Coding Projects