Nicholas J. Wohlfeil

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Education

College of Engineering / University of Michigan — Ann Arbor, MI GPA 3.00/4.00
Computer Science Engineering BSE, Class of 2024
Extracurriculars: Institute of Electrical and Electronics Engineers, Michigan Autonomous Aerial Vehicles, Summer Bridge Scholars Program, Kessler Scholars Program, Michigan Aerospace Instructional Aide
Classes: Data Structures and Algorithms, Intro to Aerospace Engineering, Intro to Computer Architecture, Software Engineering, Applied Computational Machine Learning, Computational Linear Algebra

Monroe High School — Monroe, MI GPA 3.99/4.0 (unweighted)
National Honor Society, Cross Country, Track & Field, AP Calculus Club, AP Physics Club

Professional Experience

Vehicle Optimization, Dynamics, Control and Autonomy Lab — Ann Arbor, MI
Controls Research Assistant, May 2023 - May 2024
- Conducted algorithm simulations for advanced autonomous space vehicles utilizing mobile omni-directional platforms
- Modeled constraints and control systems to ensure precise regulation of rendezvous operations in orbital environments
- Constructed interfaces for communicating between robots and ground station using a higher-level visual representation

Verified Aerospace Systems Lab — Ann Arbor, MI
Algorithms Research Assistant, September 2022 - May 2024
- Worked on the development of lightweight communication processes and computer vision algorithms to achieve safe and autonomous robot navigation
- Conducted rigorous testing and application of formal verification methods in robotics tasks.
- Handled data modeling, processing, and formalization for both autonomous and controller vehicles
- Implemented filters and additional measures to monitor and ensure the validity of state estimation in a local plane or context

Autonomous Aerospace Systems Lab — Ann Arbor, MI
Embedded Systems Research Assistant, May 2022 - August 2022
- Assisted in testing and designing an autonomous Quad Plane vehicle, employing various state transition methods through the use of RTK positioning and computer vision
- Implemented behavior patterns and PID encodings for autonomous landing configurations on rooftops
- Captured and analyzed autonomous motion data within a simulated real-world environment
- Modeled and printed 3D Fabrications to attach to aircrafts

Skills/Languages

- Programming Languages: C++, C, C#, Python, Javascript, Matlab, Julia
- Frameworks: Robot Operating System, Lightweight Communication and Marshalling, Django, Vue
- Technical: Research, Data Management & Analysis, Iterative Algorithm Development
- Professional: Mentorship, Tutoring, Leadership, Project Management, Advising

Awards/Acknowledgements

- Robotics Outreach Ambassador — August 2023
- Kessler Presidential Scholarship Recipient — May 2020

Hobbies/Interests

Video Game Development, FPV Drones, Emulation & Preservation, Horror Movies