

Oliver Hollerung

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SUMMARY

B.S. Electrical Engineering student at Milwaukee School of Engineering with numerous, hands on, practical, and team-based project experiences. Devoting ten or more hours a week being president and practicing with the MSOE Raider Baseball Club along with multiple weekend travel games series in the fall and spring seasons. Developed leadership skills as youth baseball coach. Technical skills in software programming, MATLAB, and circuit analysis.

EDUCATION

B.S Electrical Engineering | Milwaukee School of Engineering | GPA: 3.30 | Expected May 2027

PROJECT EXPERIENCE

Embedded Systems Autonomous Sumobot: Construct and program an autonomous Sumobot that pushes an opposing Sumobot outside of the designated ring using different subsystems: motion, line sensing, object sensing, display, and power.

- Designed and built a chassis out of regular and perforated sheet metal that had to pass specific dimension and weight constraints.
- Soldered wires to battery pack, switches, motors, and other circuitry components.
- Wrote functions in C to control the motion and adapt when other subsystems were triggered.
- Mounted and programmed line sensors to keep the Sumobot inside the ring and object sensors to detect the opposing Sumobot and change motion accordingly.
- Created a test plan that included each subsystem with its behavior, schematics, test procedures, and a corresponding results table.

Results: Competed in a course wide competition

Digital Systems Team Project: Collaboratively developed and demonstrated hardware and software implementation of the classic game Snake, using an Altera FPGA to create a functional user interface.

- Created a NIOS II processor system using Platform Designer in Quartus to develop an interactive game interface, including a start menu, gameplay screen, and win/lose screens displayed on a 640×480 VGA monitor.
- Designed hardware timer to continuously update game state, control snake movement, and handle apple collisions.
- Connected the NIOS II processor to on-board DE10-Lite peripherals using Platform Designer and VHDL instantiation: accelerometer for snake movement, buttons for game start/restart, switches to select snake size, and the seven segments to display the users score.
- Used Quartus for all hardware logic development, including VHDL instantiations and peripheral integration.
- Used Eclipse to develop game logic in C, manage game states and interface with hardware peripherals
- Created a grid system to track snake position and apple placement, enabling scalable snake growth and collision detection.
- Used step-by-step debugging in Eclipse to verify array indexing, boundary conditions, and ensure proper snake segment tracking.
- Simulated key gameplay events by manually triggering variables including tail length to validate functionality quickly.

Result: Achieved realistic gameplay speed with smooth visuals, responsive controls, and fully functional win/lose conditions based on in-game logic.

TECHNICAL SKILLS

- Soldering
- Circuits
- LT Spice
- Multisim
- Electronics
- HTML / CSS
- VHDL
- Quartus
- Electric Power and Machines
- C++ and C
- Eclipse
- Embedded Systems
- Signals and Systems

LEADERSHIP | CO-CURRICULAR INVOLVEMENT | COMMUNITY SERVICE

President | Club Baseball | May 2025 – Present | 10+ hours per week

Vice President | Club Baseball | May 2024 – May 2025 | 6+ hours per week

Community Service | National Honors Society | September 2022 - June 2023

WORK HISTORY

14AA Youth Baseball Head Coach | Northfield Youth Baseball Assoc. | May 2025 – August 2025

14/15A Youth Baseball Head Coach | Northfield Youth Baseball Assoc. | May 2024 - August 2024

15AAA Youth Baseball Assistant Coach | Northfield Youth Baseball Assoc. | May 2023 - August 2023

Live Stream Producer & Camera Operator | NorthfieldLive.com | January 2022 - June 2023

Field Supervisor | Northfield Youth Baseball Assoc. | April 2019 - July 2023