Ryan Pfeifer

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EDUCATION

University of Wisconsin-Madison *Madison, WI*

Bachelor of Science in Computer Engineering and Computer Science — GPA: 3.75/4.0 *Aug. 2024 – May 2028*

Honors & Awards**:** Dean's Honor List (all semesters), Two-time Claude and Dora Richardson Scholarship recipient

Relevant Coursework: Intro to Computer Architecture, Digital Circuits and Component, Digital System Design and Synthesis, Intro to Operating Systems, Machine Organization and Programming, Introductory Microprocessor Lab

PROFESSIONAL EXPERIENCE

Wide-Bandgap Materials and Devices Lab *Madison, WI*

Research Intern *May 2026 – Present*

- Designed and evaluated high-frequency components for a 10ns optically isolated gate drive for GaN HEMT
- Modeled transient switching characteristics of GaAs phototransistors in LTSpice to optimize switching speed
- Drafted CoB PCB layouts in Altium Designer, analyzing part placements to minimize parasitic inductances
- Tested prototype with custom packaged bare-die parts in a double pulse test to evaluate switching speed
- Won the Complex Concepts Communicator Award (1 of 3 total awards across 31 poster presenters) for clarity in explaining my research to peers and faculty in a research poster symposium.

Handshake *Remote*

AI Fellow *Mar. 2026 – Present*

- Designed 100+ image-based benchmarks across 3 vision-language models, probing spatial reasoning, counting, pattern recognition, and maze-solving to find where each model struggled

Morris County Golf Club *Morristown, NJ*

Caddie *Apr. 2022 – Aug. 2025*

- Carried golfers' bags for 140+ rounds, developing relationships with Fortune 500 executives and managers

EXTRACURRICULAR INVOLVEMENT

Badger Solar Racing *Madison, WI*

Low Voltage Team Member *Sep. 2025 – Present*

- Tested and verified functionality of the lighting control board by analyzing schematics and design documents
- Redesigned the lighting board using Altium, adding an E-Fuse and UVLO protection to improve reliability
- Executed end-to-end hardware development of the PCBs, physically assembling and soldering components
- Collaborated with the firmware team to implement CAN communication protocols and other requirements
- Participated in weekly team meetings to review project progress and coordinate cross-team efforts

ACADEMIC PROJECTS

MazeRunner

- Developed SystemVerilog code to autonomously navigate a robot through a prebuilt physical maze
- Fused data from gyroscopes and IR sensors to calculate heading and wall distance for PID motor inputs
- Verified logic in ModelSim and synthesized hardware for FPGA using Synopsys Design Compiler

Battleship

- Wrote a full implementation of Battleship in C using FreeRTOS on an Infineon microcontroller
- Integrated user inputs with a joystick, buttons and an IMU for various in-game functions as well as implementing communication to an LCD, light sensor, EEPROM, and piezo through SPI and I2C protocols
- Facilitated interboard communication using UART protocol for a two player experience

SKILLS & INTERESTS

- **Languages & RTL:** SystemVerilog, Verilog, C, Java, MATLAB, Git, Linux/Unix
- **EDA & Simulation:** Altium Designer, LTSpice, ModelSim, Synopsys Design Compiler, Cadence, Quartus
- **Protocols & Hardware:** SPI, I2C, UART, CAN Bus, FreeRTOS, Oscilloscopes
- **Interests:** Golf, Running, Fishing, Watchmaking