

# Zachary Milan

Ann Arbor, MI | zmilan@umich.edu

Recent computer engineering graduate with experience in PCB design, microcontroller programming, and hardware/software integration, with attention to usability and end-user experience.

## EDUCATION

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### UNIVERSITY OF MICHIGAN

Ann Arbor, MI

*Bachelor of Science in Engineering (B.S.E.) - Computer Engineering*

May 2025

**Relevant Coursework:** Advanced Embedded Systems, Embedded Control Systems, Computer Architecture, Data Structures and Algorithms, Logic Design, Signals & Systems

## SKILLS

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**Programming & Languages:** C, C++, SystemVerilog, Python, Bash

**Embedded Systems & Software Tools:** STM32, ESP32, Linux, ARM Cortex-M, FreeRTOS, KiCad, VSCode, Git

**Hardware Tools & Interfaces:** Oscilloscope, Logic Analyzer, Multimeter, I<sup>2</sup>C, SPI, UART

## PROJECTS

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### UM-LED - BLE Controlled LED Display (STM32, KiCad, C)

Jun 2025 - Present

- Developing an STM32-based LED display with BLE control, capacitive-touch brightness adjustment, haptic feedback, auto-dimming, SD-card power logging, and USB-C rechargeability.
- Completed system specification, functional block diagrams, physical design concept, remote pin mapping, power estimation, and major component selection; currently designing the remote PCB schematic.

### Capstone: DoorNote - Low Power Wireless Door Display (KiCad)

Sep 2024 - Dec 2024

- Designed and assembled a 2-layer PCB for a battery-powered ESP32-based door display, integrating USB charging, battery monitoring, and a physical shutdown switch.
- Achieved ~7 months of battery life through hardware and firmware optimizations; contributed to interface design and usability planning.

### Capstone: Superscalar RISC-V Processor & Debugger (SystemVerilog, C++)

Jan 2024 - Apr 2024

- Built core modules of an out-of-order R10K processor, including reservation station, register alias table, and dual-banked instruction cache.
- Developed a terminal-based GUI debugger in C++/NCurses to visualize processor state per cycle, saving tens of hours in integration and testing.

## WORK EXPERIENCE

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### MICHIGAN PHOTOGRAPHY

Ann Arbor, MI

*Administrative Assistant*

May 2022 – Mar 2024

- Coordinated schedules of professional photographers, maintaining even workloads and optimal assignments based on individual strengths. Utilized a combination of staff photographers and freelancers to meet workload demands, budget constraints, and client expectations.
- Directly communicated with department heads, professors, and assistant athletic directors, facilitating efficient scheduling, resolving inquiries, and ensuring timely payments.
- Ensured accurate client billing and payments by cross-checking invoices and reconciling accounts, overseeing dozens of transactions and \$70,000 in monthly revenue.

### CENTER FOR ACADEMIC INNOVATION

Ann Arbor, MI

*Fellow, Content Management*

Feb 2021 – Apr 2022

- Analyzed over 400 student feedback statements to identify trends and propose user experience enhancements for two online academic coaching tools deployed by the University.
- Researched strategies to enhance the effectiveness of scheduled emails in an online academic coaching tool, aiming to boost student engagement and utilization.
- Conceptualized and contributed to the launch of a 'Weekly Tips' email series for students in introductory courses.