Max Leblang

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Highly motivated computer engineering graduate with versatile technical experience spanning PCB design, low-level firmware development in C, and backend systems seeking an embedded software engineering role.

EDUCATION

University of Wisconsin - Madison
Bachelor of Science, Computer Engineering December 2025
GPA: 3.97/4.00

ENGINEERING EXPERIENCE

Delve Madison, WI
Embedded Systems Engineering Intern May – August 2025

- Developed bare-metal C drivers for UART-based RFID reader and SPI dual SD card system with concurrent read/write management, implementing peripheral power management battery-powered medical-grade application requirements
- Led the development and integration of production-grade firmware for an ESP32 wearable leveraging the LVGL graphics library, managing full product lifecycle from conception through building 50 units for client usability testing
- Engineered BLDC motor control firmware with closed-loop torque control and power supply architecture, collaborating across mechanical and industrial design teams to meet industrial-grade torque requirements

Paperless Parts Boston, MA
Computational Geometry Software Engineering Co-op January - June 2023

- Automated detection of broken mesh faces in uploaded customer files and implemented geometric surface replacement using HOOPS C++ geometry library, increasing customer's ability to finalize cost estimates by 7%
- Enabled the 4x increase in platform-wide file size ingestion capacity by refactoring C++ file conversion microservice from shared disk architecture to API-based file transfer

Wisconsin Embedded Systems and Computing Lab, UW-Madison Madison, WI
Machine Learning Research Engineer September 2023 – June 2024

- Designed a multi-headed CNN in TensorFlow that classified 4 distinct behaviors across 10 cows with an accuracy of 96%
- Led deep learning development for dairy cow health prediction research focusing on time-series behavior modeling and built scalable data preprocessing pipeline processing 61M data points with sliding-window segmentation

SmartMigrate Madison, WI
Co-Founder May 2025 – Present

- Conducting market validation through interviews with immigration attorneys and experts to refine product-market fit
- Leading development for AI-enabled immigration assistance platform, awarded Best Prototype, 2025 Transcend UW Competition

PROJECTS

Runaway Alarm, *Embedded Microprocessor System Design*

- Building self-balancing robotic alarm clock with custom 2-layer PCB in Altium, integrating IMU sensor fusion, dual DC motors with H-bridge drivers, and RTC module with 7-segment display
- Architecting complete hardware-software system for two-wheeled platform, defining SPI/I2C communication protocols, power distribution network, and FreeRTOS task dependencies

FPGA Knights Tour, *Digital System Design and Synthesis*

- Programmed and validated FPGA-based autonomous robot to solve Knight's Tour in real time using SystemVerilog
- Fully implemented the digital logic for UART and SPI protocols, PID motor control, and optimal traversal algorithm to the Knights Tour problem on a 5x5 board

MiniSpark, *Operating Systems*

- Built distributed data processing framework replicating Apache Spark's DAG execution and task scheduling in C
- Implemented intelligent thread pool scheduling for parallel execution with deadlock prevention

LEADERSHIP ROLES

Teen Leadership Program Coordinator, *Camp Kesem at UW-Madison*
VP of Recruitment/ VP of Social Events, *Delta Kappa Epsilon Fraternity*

TECHNICAL SKILLS

Python, C/C++, SystemVerilog, Linux, FreeRTOS, ROS2, STM32, PSoc6, Altium, Solidworks, SPI, I2C, LVGL