Max Leblang

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Highly motivated computer engineer with experience building production embedded systems and high-throughput backend infrastructure 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 Python geometry APIs and 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

- 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

Optimal Ticketing Madison, WI
Backend Software Engineering Intern June – August 2024

- Designed and built a real-time ticket data integration app in Python that reduced transaction reconciliation time by 160 hours per month by syncing purchase and inventory data across multiple API endpoints
- Increased production data sync throughput by 80% by multithreading API calls, requiring extensive system-wide data validation and logging to ensure data reliability

SmartMigrate Madison, WI
Co-Founder May 2025 – Present

- Leading development for AI-enabled immigration assistance platform, awarded Best Prototype, 2025 Transcend UW Competition

PROJECTS

Runaway Alarm, *Embedded Microprocessor System Design*

- Designing custom 2-layer PCB in Altium for self-balancing robotic alarm clock with IMU, dual DC motors, and RTC; implemented FreeRTOS firmware with task scheduling for sensor fusion, PID balance control, and SPI/I2C communication

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

FPGA Knights Tour, *Digital System Design and Synthesis*

- 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 using SystemVerilog running on an FPGA-based autonomous robot

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, Tensorflow