Max Leblang

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EDUCATION

University of Wisconsin - Madison December 2025
Computer Engineering B.S. GPA: 3.96/4.00
Selected Coursework: Operating Systems, Introduction to Robotics, Digital System Design and Synthesis

EXPERIENCE

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

- Leading firmware and hardware development for an ESP32 enabled wearable integrating the LVGL graphics library, managing full product lifecycle from conception to building 50 units for client delivery
- Wrote critical firmware drivers for RFID reader and dual SD card reader systems, ensuring seamless hardware-software integration and reliable data storage capabilities for medical-grade application requirements
- Engineered BLDC motor firmware and power architecture capable of handling industrial-grade torque requirements

WISION Lab Madison, WI
Computer Vision Research Engineer September 2024 – May 2025

- Helped release an open-source Python library that integrates sensor emulation into computer vision ground truth annotations
- Improved CLI functionality and increased subprocess management control by utilizing Tyro and Python's subprocess library

Optimal Ticketing Remote
Backend Software Engineer (part-time) January – May 2025

- Scaled integration app from prior internship to handle high throughput syncing of 10,000+ accounts in less than a minute
- Implemented a multithreaded service to maintain accurate, real-time pricing between production data and external APIs

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

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

- Took primary ownership over the deep learning section of research paper that utilizes the MMCOWS dataset to track and predict dairy cow heat illness in collaboration with a team of two graduate students (paper in progress)
- Designed a multi-headed CNN in TensorFlow that classified 4 distinct behaviors across 10 cows with an accuracy of 96%

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

- Automated the detection and healing of geometric problems in uploaded customer files that increased customer's ability to finalize cost estimates by 7% through computational geometry APIs in Python and C++
- Assisted in increasing platform-wide file size ingestion capacity by 4x by enabling the transfer of files through API calls

PROJECTS

SmartMigrate March 2025 – Present

- Awarded Best Prototype and Demo at the 2025 Transcend UW Innovation Competition
- Built a scalable, multilingual AI agent to help migrants complete asylum paperwork in over 20 languages by integrating OpenAI's Assistants API with a translation microservice in a Next.js app

MiniSpark April 2025

- Built high-performance distributed data processing framework replicating Apache Spark's core functionality in C
- Optimized DAG execution through intelligent task scheduling across thread pools that scaled to available CPU cores, achieving optimal resource utilization and preventing deadlocks in complex dependency chains

FPGA Knights Tour September – December 2024

- Successfully programmed and ran a fully autonomous robot to solve the Knights Tour problem in SystemVerilog
- Fully implemented the digital logic for 16-bit UART and SPI communication with peripheral devices, PID motor control, and the algorithm for the most optimal solution to the Knights Tour problem on a 5x5 board

TECHNICAL SKILLS

Python, C/C++, SystemVerilog, MATLAB, Communication protocols, Linux, FreeRTOS, Git, LVGL, TensorFlow, AI