Max Leblang

Brooklyn, NY 11211 | max@leblang.com | 434-422-7873 | linkedin.com/in/maxleblang | github.com/maxleblang

EDUCATION

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

ENGINEERING EXPERIENCE

Nominal   New York, NY
Instrumentation Engineer   February 2026 – Present
- Accelerating hardware test

SmartMigrate   Madison, WI
Co-Founder   May 2025 – Present
- Launched smartmigrate.app, a full-stack application (Next.js/FastAPI) automating asylum form completion with AI-enabled PDF ingestion and multilingual support; deployed on Vercel to serve non-profit legal clinics
- Awarded Best Prototype and Demo at 2025 Transcend UW Competition

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

Optimal Ticketing   Madison, WI
Backend Software Engineer   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

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

RESEARCH EXPERIENCE

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

WISION Lab   Madison, WI
Computer Vision Research Engineer   September 2024 – May 2025
- Improved user adoption by developing comprehensive documentation and usability improvements for Visionsim, an open-source sensor emulation library used in computer vision benchmarking
- Supported refactoring of Python CLI workflows to improve clarity and reproducibility across research experiments

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

Boogie Bot, *Robotics*
- Architected real-time ROS2 system with 3 custom nodes (audio processing, choreography, motion control) to synchronize xArm movements with live music on Raspberry Pi, solving timing constraints for seamless beat-matched dancing
- Developed choreography node that converted BPM to servo commands and implemented minimum jerk trajectory interpolation for smooth, natural dance motion between poses

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

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, Rust, C/C++, SystemVerilog, Git, Linux, TensorFlow, FreeRTOS, ROS2, I2C, SPI, Solidworks, Altium