JARED MAHOTIERE

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SUMMARY

Embedded systems and firmware engineer with ESP32/FreeRTOS, C, UART/I2C, DSP, and industrial controls experience from two Nucor internships in steel manufacturing.

EDUCATION

Purdue University - B.S. Electrical Engineering Technology (Computer Engineering Technology)
Minor: Computer & IT | Certificate: Entrepreneurship & Innovation | Expected May 2026
Relevant Coursework: Embedded Digital Systems, Advanced Embedded Systems, DSP, Advanced DSP, Industrial Controls, DAQ, Wireless Communications, Electronic Prototype Development, Concurrent Digital Systems

SKILLS

C, C++, C#, Python | ESP32, FreeRTOS, Arduino, I2C, SPI, UART, ADC, PWM, DMA | DSP, PID control, wireless communication | Docker, GitHub Actions, CI | .NET, SQL Server

EXPERIENCE

Nucor Corporation - Software/Automation Engineering Intern | Darlington, SC | May-Aug 2024 and May-Aug 2025

- Led system integration projects: scoped, specified, and coordinated implementation of new automation systems, ensuring seamless startup, cross-team adoption, and operational reliability.
- Developed and maintained Blazor/.NET real-time operator dashboards and robust back-end services, enhancing process transparency and improving steel production workflows.
- Managed and analyzed production data in SQL Server/QMOS databases; developed optimized queries and recommended new tables/columns to support process improvement.
- Built automated reporting and alert systems using Quartz.NET with real-time email notifications for maintenance and quality events, reducing manual monitoring and accelerating response.
- Migrated legacy Visual Basic applications to .NET/Blazor, reducing technical debt; utilized Git for version control, peer code reviews, and codebase integrity.

PROJECTS

Telemetry Node - ESP32, FreeRTOS, C, Python

- Built fixed-rate firmware telemetry with binary UART framing, CRC checks, sensor sampling, and host-side decode tooling.

cachekit - C (C11), POSIX

- Implemented a Redis-like cache server with RESP parsing, TCP event loop, TTL expiration, and persistent snapshot support.

workflow-orchestrator - TypeScript, Redis Streams, Postgres

- Built a durable distributed workflow engine with DAG validation, consumer-group workers, and failure recovery.