

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 automation internships.

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

- Supported industrial automation workflows tied to PLC/HMI production systems in a steel manufacturing environment.
- Shipped Blazor/.NET real-time operator dashboards with resilient UI state and consolidated KPI views for plant visibility.
- Built C#/.NET services integrating SQL Server and QMOS; reduced critical report runtimes 70-90% through indexing and query refactors.
- Delivered automated reporting and alerting with Quartz.NET idempotent jobs, retry/backoff logic, and legacy VB to .NET/Blazor migrations.
- Added about 240 unit/integration tests (xUnit), CI quality gates, health checks, and structured logging to improve deployment confidence.

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.