

# Brandon Granillo

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## Education

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### Arizona State University – Tempe, AZ

*Bachelor of Science in Computer Systems Engineering – GPA: 3.96*

**Expected Spring 2028**

Relevant Coursework: Computer Organization & Assembly Language Programming, Digital Design Fundamentals, Programming for Computer Engineering, Object-Oriented Programming & Data

## Experience

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### EPICS at ASU – Tempe, AZ

**August 2025 – Present**

*Lead Systems Engineer & Finance Chair*

- Lead systems engineering lifecycle for a solar energy system serving a school and rural community
- Translate stakeholder needs into formal system requirements and technical specifications
- Design system architecture integrating solar generation, battery storage, and distribution subsystems
- Own project budget, cost tracking, and resource allocation for a high-capital engineering project

### Jason Pirtle Structural Engineering LLC – Jackson, TN

**February 2024 – May 2024**

*Structural Engineering Intern*

- Produced structural layouts and revisions for commercial buildings using Revit 2024
- Applied load paths, beam and column sizing concepts, and foundation principles to real projects
- Verified that structural designs complied with local building codes and zoning regulations
- Executed independent design and drafting tasks by interpreting prior project documentation

### Dick's Sporting Goods – Jackson, TN

**June 2022 – May 2024**

*Sales Associate*

- Delivered customer-focused service by recommending footwear based on individual needs and preferences
- Maintained, organized, and designed displays aligned with promotional strategies for customer appeal
- Handled inventory restocking, shipment processing, and loss prevention by packing, labeling, and locating items
- Provided effective/efficient customer service and met target sales goals in a high-speed collaborative environment

## Projects

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### Arduino Progressive LED Control System

**Embedded Firmware, Arduino Uno, C/C++**

*Personal Project*

- Designed non-blocking embedded firmware using millis() to ensure deterministic timing behavior
- Implemented finite state machines (FSMs) to control multi-channel LED sequencing
- Added PWM-based brightness control and input-driven runtime behavior for interactive LED operation
- Integrated compile-time serial debugging via preprocessor macros with zero runtime overhead
- Applied electrical safety constraints and reliability constraints during extended hardware testing

### Traffic Light Microcontroller Project

**Digital Logic Design, FSMs, Timing & Safety**

*Digital Design Fundamentals Capstone*

- Designed a synchronous traffic light controller from first principles using clocked sequential circuits
- Engineered 6-state and 7-state FSMs using D flip-flops, combinational logic, and state diagrams
- Derived and optimized minimized Boolean logic equations via Karnaugh maps to improve efficiency
- Conducted clock-cycle simulations and timing analysis to verify correct state sequencing and stability
- Implemented safety-critical control logic to prevent invalid or unsafe state transitions

### Autonomous Maze-Navigating Robot

**Embedded Logic & Sensors, Project Manager**

*Intro to Engineering Capstone*

- Led the development of an autonomous maze-navigating robot with embedded decision logic
- Designed and programmed fault-tolerant navigation in MATLAB to handle obstacles
- Managed project planning, team coordination, and milestone tracking, ensuring on-time delivery

## Skills

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**Programming Languages:** Java, MATLAB, Python, C/C++, MIPS, BASH

**Embedded Systems:** Arduino, FSM design, non-blocking firmware (millis), PWM, serial communication

**Digital & Hardware:** Digital logic design, FSMs, D flip-flops, Karnaugh maps, timing analysis, circuit safety

## Certificates

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**AI Prompt Engineer - Courshiv, July 2025:** ChatGPT, DeepSeek, Claude, Jasper AI, MidJourney, DALL-E