

Jay Collins

(808) 785-5511 — 2jayscottcollins@gmail.com — Boulder, CO
JAYCOLLINS.ME — GITHUB.COM/2JAYCOLLINS

Education

University of Colorado Boulder, Boulder, CO

B.S. Electrical Engineering

GPA 3.82, Dean's List

Expected May 2027

Technical Courses

- Circuits I & II (A), Linear Systems (A), Electronics Design Lab (A-) Embedded Software Engineering (A)
- Data Structures (A), Prog. Digital Systems (A), Microelectronics (A), Fields and Waves (A-)
- Calculus I (A-), Calculus II (A), Calculus III (A-), Probability and Statistics (A)

Skills

Languages: C, C++, Python, RISC-V Assembly, Verilog, LaTeX

Softwares: LTspice, STM32 Cube IDE, VS Code, GitHub, Excel

Hardware & Testing: PCB Design, SMD, THT, Soldering, Oscilloscopes, Function Generators, DMM, Power Supplies

Core Engineering Skills: Circuit Design, Embedded Systems, Digital Logic, AI

Professional Skills: Technical Communication, Team Collaboration, Presentation, Documentation

Experience

Engineering Learning Assistant – CU Boulder

Jan 2026 – May 2026

- Learning Assistant for Linear Systems course, supporting 70+ students in weekly office hours.
- Explained complex concepts like convolution and Fourier transforms in clear, accessible language.
- Required a strong understanding of course material like signal processing, system analysis, and linear algebra to assist students effectively.

Deckhand – Hawai'i Nautical

May 2024 – Current

- Crew member aboard a 54 ft sailing and snorkeling catamaran, handling bartending, general maintenance, and passenger safety during tours.
- Assisted with maintenance and monitoring of onboard electrical systems, applying hands-on problem-solving to identify and address issues before they impacted operations.
- Lifeguard and CPR certified, with experience responding to emergencies and providing first aid when necessary.

Projects

BLDC Controlled Driving Robot

- Designed and built a driving robot using an Arduino microcontroller, equipped with a speaker to play music from PWM signals while driving in patterns, demonstrating integration of motion control and audio output.
- Made use of a custom PCB for motor control, soldering components and ensuring reliable connections for consistent performance.

World's Worst Alarm Clock – Embedded IoT System

- Designed and built an ESP32-based alarm clock in C++, implementing a real-time state machine, interrupt-driven encoder/button inputs, SPI OLED display, RTC timekeeping with NTP sync, and live weather data via REST API.
- Completed the full hardware lifecycle from breadboard prototyping to soldered protoboard assembly to a custom 3D-printed enclosure, with a WiFi-connected MQTT hub demonstrating pub/sub IoT architecture.

STM32 Casino Game

- Using an STM32 microcontroller, designed and implemented a casino game (blackjack and roulette modes) with an LCD display, touchscreen inputs, and clear visual feedback.
- Programmed game logic in C, including random number generation and user interaction handling, resulting in a responsive gaming experience.