

BRYAN GONZALEZ

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EDUCATION

University of Texas at Arlington

B.S. in Computer Engineering

Involvement: FSAE Team Associate, UTA Color Guard Captain

Spring 2026

Cumulative GPA: 3.1 | CSE GPA: 3.7

Certificate: Embedded Systems

SKILLS & TECHNOLOGIES

Hardware Description Languages (HDLs): SystemVerilog, Verilog

EDA & FPGA Tools: Xilinx Vivado, Intel Quartus Prime

Architecture & Protocols: RISC-V Architecture, Pipelining, AXI Bus, I2C, SPI, CAN, SoC Design, FPGA Prototyping

Programming Languages: C/C++, Embedded C, Assembly, Python, Java, HTML/CSS

Software & OS: Linux (Ubuntu), FreeRTOS, KiCad, Code Composer Studio (CCS), Keil uVision, PCB Design and Assembly

Hardware & Microcontrollers: STM32F446RE, TM4C123GXL, Real Digital Blackboard, Intel DE10-Lite

PROJECTS

5-Stage Pipelined RISC-V Processor

- Designed and implemented a 32-bit 5-stage pipelined RISC-V core (IF, ID, EX, MEM, WB) in SystemVerilog.
- Synthesized and validated the design on an AMD Blackboard FPGA running at a full 100MHz clock frequency without clock division.
- Implemented hardware hazard detection, forwarding paths, and pipeline control logic to ensure single-cycle data throughput where applicable.

FSAE Accumulator Battery Monitoring System (BeeMS)

- Designed a cost-effective alternative to the Orion II BMS for the FSAE E27 racecar accumulator.
- Developed a voltage tap board for pack-side measurements using an MSPM0G3507 MCU and BQ7697204, managing time-critical tasks using FreeRTOS in C++.
- Implemented CAN bus communication to send cell data to a masterboard and integrated passive cell balancing.
- Designed schematics and PCB layouts with KiCad.

I2C IP Module and Linux Driver

- Developed a custom I2C IP module in System Verilog for the Xilinx Blackboard, configuring and controlling the hardware across an AXI bus.
- Wrote custom Linux kernel drivers in C to interface with and manage the IP module from the processor.

8-Bit, Two-Function Calculator

- Designed a custom 8-bit, two-function hardware calculator in Verilog on an Intel DE10-Lite FPGA.
- Designed an Arithmetic Unit (AU) with full-adders and ripple carry logic, an Input Unit scanning a keypad matrix, and a time-multiplexed 7-segment display driver in Verilog.

Automated Guitar Tuner

- Developed an automated guitar tuner using an STM32 MCU and implemented the Cooley-Tukey FFT algorithm in Embedded C.
- Engineered bare-metal firmware to process microphone inputs and accurately drive a stepper motor for pitch correction.

EXPERIENCE

Olive Garden | Arlington, Texas

August 2019 - Present

To-Go Specialist

- Assist customers in placing and fulfilling takeout orders efficiently.
- Collaborate with team members to ensure seamless operations and high-quality customer service.
- Package, verify, and deliver orders in a timely manner.