

PARTH PATEL

+1 (720) 401-5727 • papa9185@colorado.edu • linkedin.com/in/parthpatel2010/ • github.com/parthnpatel20

EDUCATION

Master of Science in Electrical and Computer Engineering University of Colorado Boulder Relevant coursework: Embedded System Design, Real Time Embedded Systems, Concurrent Programming	Aug 2024 - May 2026 GPA 3.7/4
Bachelor of Technology in Electronics and Communication Engineering Institute of Technology, Nirma University Relevant coursework: Computer Architecture, Embedded Systems, Computer Networks	Aug 2020 - May 2024

TECHNICAL SKILLS

Peripherals & protocols: GPIO, UART, SPI, I2C, ADC, DAC, DMA, Timers, Interrupts, PWM, Ethernet
Lab Skills: Oscilloscopes, Interface Analyzers, Soldering, Function Generator
Programming Languages: Embedded C, C++, Python, Bash, Verilog, 8051 Assembly, Rust
Tools & Technologies: Git, Keil, STM32CubeIDE, Quartus, Vivado, Libero, FreeRTOS, Perf
Microcontrollers/Processors: Intel 8051, ARM Cortex-M0, ARM Cortex-M4, Zynq-7000 SoC FPGA

PROFESSIONAL EXPERIENCE

Amazon Web Services (Annapurna Labs) Embedded Software Intern	May 2025 – Aug 2025 Austin, TX
<ul style="list-style-type: none">Extended AWS's performance profiling tool for ARM Graviton CPUs, adding low-overhead PMU instrumentation for cycle counts, cache behavior, and microarchitectural stall analysis; improved profiling resolution by 25% on internal workloads.Developed a hardware-event-triggered profiling pipeline that automatically captures performance traces when CPU/cache and custom hardware metrics thresholds are crossed; enabled efficient debugging for longer workloads.Built a ring-buffered pre-trigger capture subsystem that records context before and after performance violations, reducing false negatives and eliminating >40% of manual reproduction effort during root-cause analysis.	

eInfochips, an Arrow electronics company Embedded Firmware Intern	Jan 2024 - May 2024 Remote
<ul style="list-style-type: none">Implemented FreeRTOS-based firmware for BLE Mesh devices, including task scheduling, synchronization primitives, and ISR-safe messaging to support concurrent radio, sensor, and system tasks on constrained microcontrollers.Integrated and debugged BLE Mesh provisioning, heartbeat, and relay features using JTAG/SWD trace and UART logging to analyze packet flow, link failures, and mesh rejoin behavior.Built a Python-based automation framework to repeatedly test BLE node bring-up, connection timing, and mesh reformation, reducing manual test effort by 50%.	

ACADEMIC PROJECTS

Custom Embedded Development Board Bring Up Link	Aug 2024 - Nov 2024
<ul style="list-style-type: none">Designed and developed a microcontroller-based board using the AT89C51RC2, integrating peripherals such as NVS-RAM, EEPROM, LCD, GPIO, DAC, ADC, and SPLD. Additionally, implemented in-system programming and gained hands-on experience in hardware integration and low-level programming in assembly language.Wrote low-level firmware for terminal-based, menu-driven, user-interactive programs to allow the user to interact with on-chip as well as off-chip peripherals.	
STM32-Based Oscilloscope Development Link	Oct 2024 - Dec 2024
<ul style="list-style-type: none">Engineered a functional oscilloscope using the STM32F091 board and ILI9341 TFT Display, implementing ADC and DMA with bare-metal programming for real-time signal acquisition.Conducted system-level verification to ensure accuracy in signal acquisition and processing. Added push-button to set voltage thresholds, attenuation, and slope adjustments, with real-time peak-to-peak voltage and frequency display.	

TECHNICAL PUBLICATIONS

Real-Time Voice Recognition System using TinyML on Arduino Nano 33 BLE Link	Nov 2023
9th IEEE International Symposium on Smart Electronic Systems	
Automated Compiler for Manycore Architectures Link	March 2024
10th IEEE International Conference on Advanced Computing and Communication Systems (ICACCS)	