# Danish Tran

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## Education

**University of California, Irvine** September 2021 - June 2025
Bachelor of Science, Software Engineering Cumulative GPA: 3.172

**Relevant Coursework:** Operating Systems, Computer Networks, Data Structures & Algorithms, Software Testing & Analysis, Databases, Software Architecture

## Technical Skills

**Languages:** C, C++, Python, JavaScript, Bash, Assembly
**Embedded/IoT:** ESP32, ESP-IDF, FreeRTOS, Arduino, Raspberry Pi, Yocto/OpenEmbedded, systemd, Linux framebuffer, UART, SPI, I$^2$C, HTTPS/TLS, REST, JSON, AWS (API Gateway, Lambda, DynamoDB), OAuth 2.0, MQTT, Wi-Fi
**Tools & Libraries:** Git/GitHub, Docker, Terraform, Figma, Trello, Jira, Postman

## Projects

**ESP32 Weather Station |** *ESP32, ESP-IDF, FreeRTOS, AWS, Terraform, Docker* October 2025 - Current

- An ESP32-based IoT weather station that reads temperature/humidity/pressure from a BME280 sensor, displays data on an LCD, hosts an on-device web server for live readings and configuration, and publishes data to a cloud backend.
- Implemented custom I$^2$C drivers in C with ESP-IDF and FreeRTOS tasks, sent HTTPS/TLS JSON payloads to AWS (API Gateway → Lambda → DynamoDB), stored configuration/credentials in NVS, and managed AWS infrastructure with Terraform and a Docker-based ESP-IDF/Terraform container.
- https://github.com/danishtran/esp32-weather-station

**Yocto Spotify Display |** *Raspberry Pi 4, C, Yocto, SPI TFT* September 2025- November 2025

- A “now playing” display for Spotify on Raspberry Pi 4 that shows track info and album art on an SPI TFT screen with smooth UI effects.
- Wrote a C application rendering to an ili9486 SPI TFT via the Linux framebuffer using custom bitmap fonts, scrolling text, and JPEG decoding with stb_image. Built a custom Yocto image (meta-raspberrypi) and packaged the app as a systemd service; integrated over HTTPS/REST with a Flask-based RFID Spotify controller project using libcurl and jansson to poll Spotify Web API state.
- https://github.com/danishtran/spotifyDisplay

**Arduino Dino Game |** *ATmega328P, C++, ST7789 TFT, Li-Po Power System* August 2025 - October 2025

- A portable Dino Game handheld console powered by an ATmega328P microcontroller with a color TFT display and custom controls.
- Programmed the game in C++ with real-time graphics, scoring, and collision detection on an ST7789 TFT; designed and assembled the hardware with a Li-Po battery, TP4056 charging module, MT3608 boost converter, and slide-switch power management on soldered on a compact prototype board.
- https://github.com/danishtran/arduinoDinoGame

**RFID Spotify Player |** *Raspberry Pi, Python, Spotify Web API, OAuth 2.0* July 2025 - September 2025

- Raspberry Pi-based RFID music player where RFID tags trigger playback of specific Spotify playlists or controls the player.
- Uses OAuth 2.0 with automatic token refresh and Python scripts integrated with RFID hardware and Spotify API for touch-free playback control.
- https://github.com/danishtran/rfidSpotifyPlayer

## Soft Skills

**Language:**
Fluent: English and Vietnamese