

Kirill Shpin

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WORK EXPERIENCE

QUALCOMM | SOFTWARE ENGINEER

San Diego, CA | July 2022 - present

- Design features for and debug issues in mobile display drivers.
- Responsible for organization of hardware equipment used for development for team of 15-20 people.
- Primary point of contact for bringing up new display interface hardware.

UC SANTA CRUZ | COMPUTATIONAL MODELS TUTOR

Santa Cruz, CA | Sep 2021 – Mar 2022

- Tutored groups of 5-10 students.
- Taught topics like Deterministic Finite Automata, Regular Expressions, Context Free Grammars, and Turing Machines.

BUSINESS REACTOR | CONTRACTOR

San Francisco Bay Area | Jun 2020 - Aug 2020

- Developed Mongo OLAP for Business Reactor, optimizing 45 minute queries to 100ms.

EDUCATION

Computer Science, B.S.

Santa Cruz, CA | Mar 2022

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Coursework: Data structures, Algorithm analysis, System design, Applied machine learning, Database systems

GPA: 3.85

Deep Learning, Algorithms

Online | Sep 2018, Sep 2019

COURSERA

[Deep Learning certificate](#), [Algorithms certificate](#)

PROJECTS

GUITAR DISTORTION PEDAL

C++, DSP | FEB 2023 - NOW

- Guitar distortion pedal using a digital signal processor to perform arbitrary transformation functions.

IOT CONTROL

C++, EMBEDDED, FREERTOS, MQTT, NODERED | MARCH 2022 - JULY 2022

- Orchestrates event producer and consumer microcontrollers, securely routing signals to control appliances.
- Uses a Raspberry Pi and ESP32 controllers communicating via secure MQTT in a DMZ network.

HTTP PROXY

C, CONCURRENCY | MAY 2021 - JUN 2021

- Listens to clients connecting and forwards requests to a server, caching files when needed.
- Fully multi-threaded and with logging capabilities, from scratch with plain C and semaphores.

CONCERTATION

C++, C, REAL TIME, CONCURRENCY, EMBEDDED | APR 2020 - JUN 2020

- Listens to the user's system audio or microphone and displays a visualization of it on screen at 60fps, with a selection of different formats.
- Transmits the data via UDP to an LED strip controlled by an ESP8266.

MONGO OLAP

JAVASCRIPT, MONGODB, NATS, AGGREGATION, OLAP CUBE | JUN 2020 - AUG 2020

- An OLAP pre-aggregation micro-service that aggregates data according to an OLAP cube schema continually as the data changes.
- Can speed up calculations of aggregates up to 10,000x, for a well chosen schema.

SKILLS

Languages: Rust, C, C++, JavaScript, Python, Java, SQL, Bash, Powershell

Technology: Git, Linux, UNIX, Computer Architecture, Docker, Ansible, NATS, Internet of Things, Microcontrollers, RTOS, Networking, Embedded Systems, MongoDB, PostgreSQL, Tensorflow, OLAP, React, Cloudflare Workers, Linux Drivers, MIPI DSI