Kirill Shpin

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EDUCATION

Computer Science, B.S.   Santa Cruz, CA | Sep 2020 - 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

WORK EXPERIENCE

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.

PROJECTS

IOT CONTROL ⤤   C++, EMBEDDED, FREERTOS, MQTT, NODERED | MARCH 2022 - NOW
- 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.

RUSTCERTATION ⤤   RUST, REAL TIME, CONCURRENCY | DEC 2021 - NOW
- A version of Concertation rewritten in Rust with a better architecture.
- CPU usage is lower by 15%.

MOCK SOCIAL MEDIA PLATFORM ⤤   JAVASCRIPT, REACT, CLOUDFLARE WORKERS | DEC 2021
- A front end of a social media platform in React and Cloudflare workers.
- Opts in for Cloudflare workers key-value storage for persistent data, instead of a traditional database.

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