

## Education

M.S. Electrical and Computer Engineering

UC Irvine | 2022

B.S. Electrical Engineering, focus in DSP

CSU Long Beach | 2019

## Experience

Computer Engineer III

Western Digital | 2021 – 2022

- Developed machine learning software for “big data” analysis
- Programmed low-level signal processing and testing tools in firmware
- Performed hardware failure analysis and large-scale data extraction

Graduate Researcher

UC Irvine | 2021 – 2022

- Developed software for modeling of parallelized, multi-core computers

Computer Engineer I

CiyaSoft | 2019 – 2021

- Developed software for image processing and machine translation
- Wrote technical and analytical reports for legal team

## Skills

### Python

- SciKit
- NumPy
- Pandas
- TensorFlow

### TypeScript

- D3.js
- Svelte
- WebGL
- SvelteKit

### C & C++

- Boost
- SystemC

### Rust

- Tauri
- Rayon

### General

- Git
- SQL
- UNIX
- HTML & CSS

## Projects

### Filmic, analog film emulation app

*Rust · Svelte · WebGL · Python · TypeScript · JavaScript*

- Developed photo editing app to mimic look of analog film stock
- Used Svelte for front-end logic and modularization, and D3.js for rich SVG UI manipulation
- Programmed GPU shader for fast interpolation and signal processing with WebGL 2.0
- Implemented image processing features, e.g. tone curve, color response, granular noise, diffusion
- Developing cross-platform desktop version with Tauri for batch processing

### Modeling of multi-core, checkerboard architecture

*C++ · Python*

- Modeled proposed multi-core SoC in SystemC and implemented JPEG encoding benchmark
- Wrote thesis from simulation results, and helped author related conference paper

### Signal classification and pattern matching

Western Digital | *C · C++ · Python*

- Built data extraction and transformation pipeline from factory testing data
- Trained neural network to classify known types of problematic data patterns in production
- Wrote algorithms to extract useful statistical signal metrics for trainable pattern matching
- Designed and automated rich visualizations for key metrics with Plotly

### Website and blog

*Python · SvelteKit · TypeScript · JavaScript*

- Built and designed from scratch with SvelteKit for simple routing and server-side rendering