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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 shaders 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 "checkerboard" 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 to weigh business impact

Website and blog
Python · SvelteKit · TypeScript · JavaScript

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

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