Arya "Dee" Daroui www.aryadee.dev adaroui@uci.edu

Experience

Computer Engineer III Western Digital | 2021 – 2022
- Wrote machine learning software for identifying in-manufacturing hardware faults and anomalies
- Programmed low-level signal processing and testing tools in firmware
- Performed manual hardware failure analysis and staged large-scale data extraction

Graduate Researcher UC Irvine | 2021 – 2022
- Wrote software and literature for modeling of multi-threaded / multi-core computers

Computer Engineer I CiyaSoft | 2019 – 2021
- Developed low-level algorithms and testing tools for image processing and machine translation
- Wrote technical and analytical reports for legal team

Skills

Python
- SciKit
- NumPy
- Pandas
- TensorFlow

TypeScript
- D3.js
- SvelteKit
- WebGL 2
- AWS SDK

C & C++
- Boost
- SystemC

Rust
- Tauri
- Rayon

General
- SQL
- Redis
- DynamoDB
- HTML & CSS

Projects

Website and blog *Python · SvelteKit · TypeScript · JavaScript*
- Built with SvelteKit and Vite for easy server-side rendering and asset loading; deployed on Vercel
- Managing visitor analytics and auth with AWS DynamoDB, and API rate limiting with Upstash Redis

Signal classification and pattern matching Western Digital | *C · C++ · Python*
- Built data extraction and transformation tools for factory testing data with Pandas
- Trained neural network to classify problematic data patterns in production with TensorFlow
- Wrote low-level DSP algorithms to extract statistical signal metrics for trainable pattern matching
- Designed and automated rich visualizations with Plotly to weigh manufacturing impact

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 accelerated cubic interpolation and image processing in WebGL 2
- 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 UC Irvine | *C++ · Python*
- Wrote software to model bespoke CPU architecture, with accompanying thesis and conf. paper

Education

M.S. Electrical and Computer Engineering UC Irvine | 2022

B.S. Electrical Engineering, focus in DSP CSU Long Beach | 2019

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