

AARON LI

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Motivated new CS graduate looking for a job in software development

EDUCATION

UC San Diego

2018 – 2023

Bachelor's Degree in Computer Science

Courses include:

- ⇒ CSE 131: Compiler Construction (in Rust)
- ⇒ CSE 141/141L: Introduction to Computer Architecture (and Lab)
- ⇒ CSE 120: Principles of Operating Systems
- ⇒ CSE 123: Computer Networks
- ⇒ CSE 107: Intro to Modern Cryptography
- ⇒ CSE 127: Intro to Computer Security
- ⇒ CSE 160: Intro to Parallel Computing
- ⇒ CSE 151B: Deep Learning
- ⇒ CSE 152A/B: Intro to Computer Vision I/II
- ⇒ CSE 166: Image Processing
- ⇒ CSE 169: Computer Animation
- ⇒ CSE 166: Computer Graphics
- ⇒ CSE 130: Programming Languages: Principles and Paradigms (in Haskell)

EXPERIENCE

UC San Diego, Internship

June 2022 – December 2022

- ⇒ Created animated human head models for a virtual interview study

Genvira Biosciences, Internship

Summer 2019, 2020

- ⇒ Read paper and reproduce results by using a neural network to predict neo-antigens
- ⇒ Built the company's website using [Hugo](#), a static site generator
- ⇒ Set up web server and configured to protect against random probes

Futurewei Technologies, Internship

June 2018 – August 2018

- ⇒ Evaluated See-In-Dark DL network for dark scene image processing
- ⇒ Created new dataset with a smartphone camera; retrained neural network weights
- ⇒ Assembled DL workstation from parts; set up Linux DL environment

PROJECTS

Nvidia Jetson

June 2023 –

- ⇒ Orin NX 16GB
- ⇒ Flash memory from backup; expand partition and filesystem
- ⇒ Use gstreamer to open CSI camera
- ⇒ Set up Yolo5 and accelerate with TensorRT

Compiler for "Snek", CSE 131: Compiler Construction

2023

Write compiler for a toy S-expr based "Snek" language.

- ⇒ Written in Rust using functional paradigms
- ⇒ Implemented garbage collector
- ⇒ Compiles to x86 assembly

Design ISA and Processor, CSE 141L: Introduction to Computer Architecture Lab

2023

Design an ISA and a simulated processor to run 3 programs on generated data

- ⇒ 9 bit instructions; 8 bit data
- ⇒ Programs 1/2: encode/decode Hamming Code ECC
- ⇒ Program 3: pattern search
- ⇒ Register-Accumulator architecture
- ⇒ Processor written in SystemVerilog
- ⇒ "Assembler" written in Rust
- ⇒ Simulated/validated in QuestaSim/Quartus

Fluid Simulation, CSE 169: Computer Animations

2023

An attempt at creating a simple fluid simulation on GPU

- ⇒ Written in Rust
- ⇒ Uses WGPU
- ⇒ Compute shaders in WGSL for running on the GPU

Cloth Simulation, CSE 169: Computer Animations *2023*

- ⇒ Written in Rust
- ⇒ Uses WGPU and WGSL
- ⇒ Optionally loads starting configuration from a JSON file

Pyramid-based Image Fusion *2021*

Generates Laplacian pyramids for two images, merges each layer, then reconstructs merged image

- ⇒ UI created using QT
- ⇒ OpenCV for image input/output only
- ⇒ Written in C++

Fractal Generation *2020*

Generates images of the Mandelbrot set and it's associated Julia sets

- ⇒ Written in Java
- ⇒ CPU with no zooming optimizations

Boid Simulation *2019*

A simulation of generic flocking creatures

- ⇒ Written in Java
- ⇒ Quad Tree
- ⇒ Simple basic rules: Separation, Alignment, Cohesion

Sorting Algorithms Visualization *2019*

Runs multiple sorting algorithms on a randomized color gradient to visualize how each works

- ⇒ Inspired by other visualizations found online
- ⇒ Running each algorithm "step"wise requires thinking about each differently
- ⇒ Visualizes many common and uncommon sorting algorithms

Arch Linux installation *2022 - Present*

- ⇒ Installed Arch linux manually (without `archinstall`)
- ⇒ Set up zram and zswap
- ⇒ Set up a simple web server with dynamic DNS and `certbot` for https
- ⇒ Dynamic DNS also used for ssh access
- ⇒ Installing and modifying AUR packages, including from source and a local git repository
- ⇒ Fixed issue with GPG2 failing to contact key-servers

ACTIVITIES

Attended CVPR in person *2022, 2023*

SKILLS

Programming Languages and Frameworks

- ⇒ Rust
- ⇒ Java
- ⇒ Python
- ⇒ - WGPU
- ⇒ Kotlin
- ⇒ SystemVerilog
- ⇒ WGSL
- ⇒ C/C++
- ⇒ L^AT_EX

Other

- ⇒ Arch Linux

AWARDS AND SCHOLARSHIPS

National Finalist, CyberPatriot, Open division *2018*

6th place among 3500 registered high school teams

Received all-expenses paid trip to compete at the National Finals competition at baltimore, MD

2nd place, Control Award, First Tech Challenge *2015-2017*

Team leader, 1st operator