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 *June 2020 – September 2020*

- ⇨ 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 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 keyservers

ACTIVITIES

Attended CVPR in person *2022, 2023*

SKILLS

Programming Languages and Frameworks
- ⇨ Rust
  - WGPU
- ⇨ WGSL
- ⇨ Java
- ⇨ Kotlin
- ⇨ C/C++
- ⇨ Python
- ⇨ SystemVerilog
- ⇨ LaTeX

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