

Alex Huang

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EDUCATION

Yale University | 2021-2025 | **Dual Degree:** MS & BS in Computer Science | GPA: 3.9

- **Leadership:** Yale Radio (Head of Broadcast Engineering) & Yale Student Chapter of IEEE (Treasurer)

EXPERIENCE

Async VLSI @ Yale | Undergraduate Researcher March 2024 - Present

- Designing chips using TSMC 65nm tech to create an async high-speed serial link using ACT and PRS transistors rules.
- Simulated and tested the chip using SPICE with analog transmission line effects to improve bitrate by 120%.

Neurobit | Software Developer Intern | Taipei, Taiwan May 2023 - August 2023

- Built systems to calibrate gyroscopes data to video to help diagnose eye diseases.
- Designed an Blazor app to label eye tracking data for a Pytorch model, labeling 5000 samples.

Interactive Machines Group @ Yale | Robotics Research Intern May 2022 - May 2023

- Developed new greeting behaviors using ROS and MoveIT to control servos and calculate gaze for our robot, [Shutter](#).
- Deployed our robot in public to research effective ways of engaging interaction, resulting in an authored paper.
- Built a live web interface to evaluate robot status and to manually control behavior with Vue.js and ROS websockets.
- Developed and launched a feature to increase the effective range of Shutter by 85%, by adding Kinect sensors and building software to establish **identification coherence** between cameras using **PyTorch** and heuristics

Doordash | Full-Stack Engineer Intern May 2021 - August 2021

- Migrated and refactored Angular codebase into React while resolving critical caching and XSS bugs.
- Built services with Google Maps Integration and new menu search features using React and Django Backend.
- Developed E2E front-end testing protocols/documentation using Cypress.
- Implemented advanced analytics tracking using Amplitude to track online ordering preferences.

Gapyearly | Lead Software Engineer January 2021 - May 2021

- Self-Architected and maintained [custom web app project](#) from scratch with a UX designer for a student run organization.
- Built features including real-time chat, user matching, profiles, and a blog using Next.JS/React for over 100+ users..
- Developed a Back-End Stack using Strapi and MongoDB. Stored images in an S3 bucket. Implemented SEO

PROJECTS

github.com/NukeWolf

Verilog Parcv2 Processor / Designed a CPU in Verilog for Parcv2, a variant of MIPS with 5-stage pipelined bypassing. Implemented 2 instruction fetching and out-of-order execution with a reorder buffer

HTTP1.1 Select Server / HTTP server in Java from scratch using a selector server model with epoll. Features include a multithreaded worker pool, CGI execution, header parsing, chunked transfer.

Arduino LightSaber / Physical Lightsaber built with Arduino and Leds, using a gyroscope to detect motion.

P4 OSPF Router / Software-simulated router with OSPF Protocol, and ARP cache and ethernet switching.

Portfolio / My personal portfolio built in React with routing and responsive design.

Rucio @ CERN / Contributed open-source code to improve data transfer times, through parallel data streams

SKILLS

Coding Languages | Python, JS, HTML, CSS, C, C++, SQL, Verilog, Java, C#,

Tools | Vivado, React, ROS, Blazor, Git, UNIX, C#, Linux, Angular, MoveIt, Xilinx

Skills | Micro-Architecture, Cyber/CTF, Agile Development, Digital Systems, Robotics

Coursework | Computer Architecture, Neural Network Hardware, Data Structures, Linear Algebra, Embedded Systems, Algorithms, Intro Computer Engineering, Compilers, Networked Systems, OS, Building a Router, Intro to ML