

Charles Wang

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charl.sh

Education

University of Pennsylvania · Philadelphia, PA
School of Engineering & Applied Science
Bachelor of Science in Engineering

expected May 2026

GPA: 3.70/4.0

Major: Digital Media Design (Computer Graphics); **Minor:** Design

Projects

Mini Minecraft

Voxel-based C++ game engine using OpenGL. Made in a team of three. I was responsible for implementing chunking, efficient rendering/face culling, block texturing, day/night sky system, flood fill lighting, inventory, and GUI/text rendering.

RCW

Endless Unity minigame inspired by the Stroop test. UI was prototyped in Figma and programming was done in C#. Playable from your browser via the WebGL version.

charl.sh

Personal website built using Astro and Tailwind CSS. Deployed on Vercel. Fetches recent music listening data and employs server side rendering for improved performance.

sddm-theme-corners

Customizable and user-friendly login screen for SDDM, a Linux session manager. Written with QML and Qt Quick. Has 85+ stars on GitHub.

Experience

Penn Engineering

August 2023 — present

Undergraduate Research Assistant, Full Stack Engineer

- Built and shipped a full stack web platform for Scallop, a Rust-based neurosymbolic programming language optimized for logical tasks. Made in a team of three.
- Architected RESTful API routes that handle communication between the Next.js frontend, Flask backend, and MySQL database. Uses tRPC and Prisma.
- Implemented OAuth user authentication as well as auth-protected procedures of saving, loading, and publishing of custom user projects from the database.

New America

June — August 2023

build4good Intern

- Overhauled the build4good website to be more accessible, including screen reader support, better color palette, and other visibility issues via WordPress and Elementor
- Researched and presented findings for UI/UX regarding interactive geomapping timelines, to be used in New America's *Library Sit-In of 1939* project

Leadership

UPenn Game Research and Development Environment

January 2023 — present

Board Member, Event Organizer

- Plan and host events such as our school-wide game jam, annual PAX trip, and guest speakers. Also help develop our semester game projects.
- Develop and maintain the brand identity and design of the club. Create social media assets using it. Built the club website, pennupgrade.com, using Astro.

UPenn ACM SIGGRAPH Chapter

October 2022 — present

Board Member, Webmaster

- Host tool workshops, talks from industry people and alumni, and demo reel reviews.
- Manage and continually update the club website, cg.cis.upenn.edu/siggraph with events and happenings. Written in React and uses Three.js for 3D models.

Technical Skills

Languages

C++, Java, JavaScript/TypeScript, HTML/CSS, C#, Python, GLSL

Platforms + Tools

Git/GitHub, Unity, Figma, Illustrator, Linux, Blender, command line

Frameworks + Libraries

React, Next.js, OpenGL, Three.js, Qt, Tailwind CSS, Astro

Relevant Coursework

- Data Structures & Algorithms
- Computer Systems
- Interactive Computer Graphics
- Computational Linear Algebra
- Digital Design
- Drawing

Interests

Open source, game development, web development, UI/UX, functional programming

Running, bass guitar, ricing my Arch desktop, designing album covers