

# Charles Wang

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## 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 from scratch in a team of three. I was responsible for implementing chunking, efficient rendering/face culling, block texturing, day/night sky system, and flood fill lighting.

### 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 WebGL.

### 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 80+ stars on GitHub.

## Experience

### Penn Engineering

*August 2023 — present*

Undergraduate Research Assistant, Full Stack Engineer

- Built and shipped a web platform for Scallop, a Rust-based neurosymbolic programming language optimized for working with deep learning tasks and LLMs.
- 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 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, Event Organizer

- Develop and maintain brand identity and design, as well as adapting it across different platforms like social media and our club website.
- Plan and host events such as our school-wide game jam, PAX East field trip, guest speakers, and our semester-long game projects.

### UPenn ACM SIGGRAPH Chapter

*October 2022 — present*

Webmaster, Board Member

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

## Technical Skills

### Languages

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

### Platforms + Tools

Git/GitHub, Unity, Figma, Illustrator, Blender, Linux, 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, creating Geometry Dash levels