

# 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 Maya

Mesh editor that supports Catmull-Clark subdivision, face triangulation, edge splitting, skinning via skeleton binding, and more. Utilizes a mesh deformation shader.

### 3D Rasterizer

CPU-based OBJ renderer written in C++. Supports antialiasing (up to 16x), and Lambertian and Blinn-Phong shading. Uses Qt for UI.

### RCW

Endless Unity minigame written in C#. UI was prototyped and exported from Figma. Color-based gameplay inspired by the Stroop effect. Playable directly from the browser!

### charl.sh

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

### sddm-theme-corners

Extremely customizable login theme for SDDM, a Linux session manager. Written in QML and uses Qt Quick. Has 80+ stars on GitHub.

## Experience

### Research Assistant under Dr. Mayur Naik

*August 2023 — present*

Full Stack Web Developer

- Built and shipped a complete web platform for Scallop, a Rust-based neurosymbolic programming language optimized for working with deep learning tasks and LLMs.
- Architected RESTful API routes that enable communication between the Next.js frontend, Flask backend, and MySQL database, handled via 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 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. Written in React and uses Next.js and Three.js

### UPGRADE

*January 2023 — present*

Event Organizer

- Plan events for UPenn's game development club, including a school-wide game jam, a trip to PAX East, and guest speakers
- Organize our yearly club-made games through our GitHub organization and repositories

## Technical Skills

### Languages

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

### Platforms + Tools

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

### Frameworks + Libraries

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

## Interests

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

Running, bass guitar, ricing my Arch desktop, designing album covers, creating Geometry Dash levels

## Relevant Coursework

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