Charles Wang

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Education

University of Pennsylvania · Philadelphia, PA — *expected May 2026*
School of Engineering & Applied Science — **GPA:** 3.70/4.0
Bachelor of Science in Engineering

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

Relevant coursework: Discrete Mathematics; Data Structures & Algorithms; Computer Systems; Theory of Computation; Interactive Computer Graphics

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

Engineering Summer Academy at Penn — *July 2023*
Residential Teaching Assistant
- Assisted professor in teaching 60+ high school students a college-level computer science class using Python and Jupyter notebooks
- Supported students' learning through Ed Discussion, daily office hours, supplemental homeworks, and translation aid for international Chinese students
- Coordinated daily activities across 3 weeks while on a limited budget of ~$1800, including hot pot, study breaks, an escape room, and a tour of Philadelphia's Center City

Projects

charl.sh
Personal website built using Astro, React, and Tailwind CSS. Deployed via Vercel. Employs deferred image loading and server side rendering for better performance.

3D Rasterizer
512x512 image renderer written in C++. Supports antialiasing (up to 16x), importing .OBJ files, and Lambertian and Blinn-Phong shading. Uses Qt for the UI and OpenGL under the hood.

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!

sddm-theme-corners
Extremely customizable login theme for SDDM, a Linux session manager. Written in QML and uses Qt Quick. Has 60+ stars on GitHub.

Technical Skills

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

Platforms + Tools
Git/GitHub, Figma, Linux, command line, Docker, Vercel

Frameworks + Libraries
React, Next.js, Tailwind CSS, OpenGL, Qt, Astro, NumPy

Leadership

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-wide games through our GitHub organization and repositories

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

Interests

Open source, web development, functional languages, UI/UX, procedural graphics

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