

Sam Huang

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SUMMARY

Self-taught with significant open-source contributions, experience developing commercial software, and strong background in competitive programming.

EXPERIENCE

Founding Engineer

Avatar Cam

2021-Present

Commission-based software to display controllable and interactive avatars for creators.

- Layering system and customizable actions to allow sophisticated cam appearances.
- Probability-driven, non-deterministic lip phoneme predictor from an input device to simulate lip-synchronization.
- Integration with Twitch services to allow emotes signaled by events such as new subscribers.
- Created real-time internal imgui UI to reduce labor time for artists by 40%.

Class Mentor (Intro to Programming)

Code the Dream

Sep 2022-Feb 2023

- Tutored a small group of students on HTML, CSS, and JavaScript by leading weekly-hour sessions.
- Provided 1:1 assistance, code reviews for assignments, and resolving blockers for students.

PROJECTS

Fast Olympic Coding for VSCode

A VSCode extension to automate labor-intensive tasks within competitive programming setting.

- Optimized rapid IO communications with asynchronous design and batching to at most 5ms.
- Compatibility with Competitive Companion to seamlessly fetch problem or contest data.
- Used Preact and TailwindCSS to minimize extension size by 80% and leveraging Preact Signals to bypass virtual DOM updates for hot spots.

Competitive Programming Collection

A collection of data structures and algorithms used within programming contests in C++17.

- Utilized generic abstractions to allow maximum customization and manage complex dependencies.
- Includes a randomized stress testing suite that executes every commit to ensure valid compilation and correct implementation.

SIGNIFICANT OPEN-SOURCE CONTRIBUTIONS

microsoft/STL

- Implemented several C++23 features related to `std::string_view`.
- Enhanced the STL with various LWG resolutions and added user-friendly warnings for best practices.
- Created a GitHub automation to allow pull request authors to manage their PR statuses.

libsdl-org/SDL

- Added support for transparent window backgrounds on Windows.
- Fixed misleading behavior with file dialogs on Windows.

EDUCATION

Art of Problem Solving

2025-2026

CodeWOOT (Code Worldwide Online Olympiad Training)

SKILLS

Programming Languages: Python, C++, JavaScript, HTML, CSS, CMake