

Chun-Min Chang

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Summary

- Highly self-driven software engineer with **8+** years experience of developing Firefox browser engine in different languages (**C++ / Rust / JavaScript**)
- **Lead** engineer and key developer for several multimedia projects, including WebCodecs, audio system in web conferencing, cross-platform audio library in Rust, ..., etc.
- Improve the audio playback performances: speed up start time to 35x faster and reduce 90% delay
- Experience in **multi-threaded** programming in C/C++/Rust

Work Experience

Senior Software Engineer, Mozilla, Portland, U.S.

Mar, 2021 - Present

- Empower web to maximize the efficiency of media processing (W3C WebCodecs API) ([Link](#))
- Facilitate using multi-mics in web conferencing by designing a device-based audio system ([Link](#))

Software Engineer, Mozilla, Portland, U.S.

July, 2018 - Feb, 2021

- Strengthen stability by migrating Firefox audio library on MacOS from C/C++ to Rust ([Link](#))
 - Hunt and solve 10+ data racing issues and memory leaks discovered
 - Boost performance 35 times faster when multiple streams start simultaneously
 - Enlarge test coverage to nearly 100% for the critical code paths
- Enable controlling media playback in Firefox from system UI (W3C Media Session API) ([Link](#))
- Implement transparency support for AVIF image format in Firefox ([Link](#))
- Core code reviewer of the team with multinational members ([Link](#))

Software Engineer, Mozilla, Taipei, Taiwan

Oct, 2014 - Jan, 2018

- Eliminate ~90% delays between looping audios ([Link](#))
- Enhance music listening experience by implementing surround sound (Audio 5.1/7.1) on various platforms (Windows, macOS, Linux) ([Link](#))
 - Design an audio mixer converting audio between any channel layouts ([Link](#))
- Improve daily bug-triage efficiency of system diagnosis by building a tool gathering audio devices information for the bug reports (it's being used every day) ([Link](#))
- Establish a secure mechanism of data transmission, J-PAKE over TLS, between Firefox OS TV and Firefox Android ([Link](#))
- Enable casting webpages to Firefox OS TV from Firefox desktop (W3C Presentation API) ([Link](#))
- Enable connecting input-methods on Firefox OS phone with the paired physical keyboard ([Link](#))

Education

National Tsing Hua University

Hsinchu, Taiwan

• M.S. in **Computer Science**

Sep, 2012 - Aug, 2014

- Advisor: Prof. [Pai H. Chou](#) ([Embedded Platform Lab](#))
- Thesis: Cooperative Tracking using Encounter Information by Particle Filtering ([Link](#))

• B.S. in **Computer Science**

Sep, 2008 - June, 2012

- **Third Prize**, CS project contest for senior students: Remote Controllable Wifi Webcam Car ([Link](#))
- Head of guitar club and co-musical clubs and the brain for activity planning for 10+ camps

Skills

- Programming: C/C++, Rust, Javascript, HTML, CSS, Python, Shell
- Tools: VCS: Git, Mercurial, Debugging: GDB, LLDB
- Operating Systems: Linux, MacOS, Windows
- Language: Taiwanese (Native), Mandarin (Native), English (TOIEC 905/990)