

Chun-Min Chang

Email: chun.m.chang@gmail.com
Website: <http://chunminchang.github.io/>
GitHub: <https://github.com/ChunMinChang/>
Linkedin: <https://www.linkedin.com/in/chunminchang/>

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 redesigning audio processing infrastructure ([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)