

Chun-Min Chang

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Summary

- 6 years experience of developing Firefox browser engine, which is a large-scale open project, in different domains focused on audio
- **Lead author** of Firefox's **cross-platform audio** library on macOS platform (CoreAudio) in Rust, which serves millions of user every day
- Improve the audio **playback performances**: speed up start time and reduce 90% delay
- Experience in multithreaded programming in **C/C++/Rust**
- Comfortable working on multiple projects at the same time

Work Experience

Software Engineer, Mozilla, Portland, U.S.

July, 2018 - Present

- 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 (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: Windows, MacOS, Linux
- Language: Mandarin (Native), Taiwanese (Native), English (TOIEC 905/990)