

Thom Chiovoloni

✉ chiovolonit@gmail.com • 🌐 <https://shift.click> • 🐦 @at_tcsc • 🌐 thomcc

Professional Experience

Mozilla

Sr. Platform Engineer

Mar. 2016–Aug. 2020

- Worked on Firefox Sync for both Desktop and mobile.
- Designed and implemented the “sync telemetry ping” which collects anonymous usage and error data from Sync users who enable Firefox telemetry.
- Did various performance and optimization tasks around the browser during the Firefox Quantum effort.
- Helped lead the effort to consolidate our 3 separate implementations of sync (Desktop, iOS, Android) into a shared set of Rust libraries (the “Rust Components”) that exposes idiomatic JavaScript, Swift, and Kotlin APIs.
- Designed and implemented the “Megazord” system, reducing the binary size overhead of the “Rust Components” by both deduplicating shared code (Rust stdlib) and allowing downstream applications to choose a “megazord” which contains only the components they need.
- Pioneered techniques and wrote [a library](#) for safely and easily exposing Rust to Android and iOS. This used Rust’s type-system to minimize unsafe code and keep the core of our components in idiomatic and safe Rust. As part of this, wrote [lots of documentation](#), so that the whole team could write FFI code.
- Created “viaduct”, a HTTP library with pluggable backends, routing requests through “GeckoView” on Android, “Necko” in desktop Firefox, or a pure-Rust HTTP stack when running local unit tests.
- Implemented the “logins” Rust component, providing storage and sync for password managers, used Lockwise and mobile Firefoxes. This was the first Rust Component, and laid groundwork for the others.
- Implemented a number of other smaller pieces of the “Rust Components” including: The Sync 1.5 API client, optimized history search behind Fenix’s “awesome bar”, our logging adapter, the Swift and Kotlin APIs for Bookmarks (and FFI).

Muzzy Lane

Game Programmer

Newburyport, MA

Feb. 2014–Feb. 2016

- Lead engineer on multiple successfully shipped games, including *Practice Spanish: Study Abroad*, *Practice Spanish: Mini-Games*, *Practice Medical Office*.
- Implemented game client and server for various game authoring tools.
- Implemented games and tools using Unity3D, HTML5, or our custom C++ game engine (Locust).
- Added a number of optimizations and features to the C++ game engine (text styling, garbage collected scripting, ...).

UConn Office for Sponsored Projects

Web Application Developer

Storrs, CT

2011–2013

- Responsible for the creation of internal web applications.
- Applications were written mainly in JavaScript, but used ColdFusion and Oracle SQL, or PHP and MySQL for the backend.

Errata

Open Source: Maintainer of rusqlite and libsqlite3-sys, former maintainer of ‘rust-android-gradle’, several uninteresting rust crates, has lots of patches in lots of things.

Technical Interests: Optimization, FFI (making different languages talk), Databases, Unicode, Data structures, Low level tooling, Threading/Thread-safety, Memory-safety and “unsafe Rust”, Terminals (virtual and retro)

Languages: Rust, C++, C, JavaScript, Kotlin, Swift, SQL, Scheme, C#, Java, Objective C, quickly picks up new languages.

Platforms: More than passing familiarity with: MacOS, Linux, Windows, iOS, Android, Web (JS/HTML/CSS), Wasm, Unity3D, ...

Techniques: Syncing, Compilers, Compression, Build tooling, Collision Detection (3D/2D), Calculus and Linear Algebra, Several things under “Technical Interests”...