



*Riff
Realm*

Learn and Play Guitar In Mixed Reality

Limitations of learning guitar with digital media

- Screen-based guitar tuition is valuable, but it means the guitar player needs to either be sat at a desk or have mobile device stand
- The laptop or mobile device needs to be within arms length to allow control of the tuition app or video.
- This leads to sitting in an uncomfortable position that makes playing the guitar harder
- Most people are using relatively small screens; 6-15 inch making it hard to read notation
- There is a disconnect between the guitar and the music to be played

Riff Realm Solves This Problem with MR

- Riff Realm brings the music notation and tuition right in front of the players guitar
- One to one visual connection between physical guitar and what is to be played
- Removes the need to be hunched over a small screen
- Touch interaction allows intuitive control of the tuition or notation
- The guitarist can position the music visualization anywhere that suits them

Guitar Tracking Modes

Tracking a guitar isn't as easy as instruments such as a piano as guitars move with the guitarist.

- Riff Realm will offer three tracking modes that control how the app interacts with the user's guitar.
- No Tracking
 - Allows the user to place Riff Realm 3D content at a fixed position near to the physical guitar
 - Still provides great benefit and freedom over being reliant on a small screen
- Hand Tracking
 - Guitar neck position is estimated from hand position
 - Requires no effort on the user's part but not accurate enough to virtually place notes on the guitar fretboard
- Controller Tracking
 - If a controller is in a wrist strap grip accessory, it can be easily mounted to the guitar headstock. This provides extremely accurate tracking of the guitar neck
 - Notes can be overlaid directly on the guitar fretboard



Native Support For Guitar Pro Files

- Guitar Pro files are the de facto standard for digital guitar tablature
- Riff Realm uses an open source library, that we ported to C# to read Guitar Pro
- Allows Guitar Pro files to be downloaded and played, right on the headset.
No friction of needing a companion app on a Mac or PC.

The Market

- Around 10% of the world's population knows how to play the guitar to some level
- The online music learning market was \$1.22B in 2022
- Roughly 52% of guitar players of male, 48% female

Business Model – Free, Paid & Subscription

- Riff Realm will be a freemium app to encourage Quest users to try it with no upfront commitment.
- Free version will include basic chords, basic scales and some public domain songs.
- The paid version can be unlocked via a Meta Quest In App Purchase. This will allow the user to access all chords, all scales and play any custom songs they want to add
- A monthly subscription will unlock Riff Realm tuition



Riff Realm Tuition

- A Riff Realm “learn guitar” course is in the process of being created.
- This will be available within the Riff Realm app for a monthly subscription.
- The course will be presented as a video window of the lesson, synced with exercises visualised right in front of the user’s guitar.
- Should be a magical, never before seen experience for learning guitar.
- One possibility is to film it in stereoscopic 180

Music Licensing

- Only public domain or self-composed music will be bundled with the application
- Users can download fully licensed tablature from sites such as Ultimate-Guitar.com and PaidTabs.com
- An eventual end goal would be to offer a monthly subscription for mainstream song tablature, under a licensing agreement with a sheet music publishing company

Existing Riff Realm IP

- Foundation development work already completed
- RiffRealm.com domain acquired
- Riff Realm US trademark application filed
- Logo and branding already established



Current State Of Development

- Ground work done to port library to read Guitar Pro files
- Concept work done in Unity to visualise, scales, chords and Guitar Pro files
- Initial planning Riff Realm Tuition course
- Some test shoots done for the Riff Realm Tuition course

Milestones & Deliverables

- Mechanical Proof of Concept
 - Will demonstrate the guitarist being shown chords, scales and full songs in the headset
 - On a path to completion by December '24.
- Vertical Slice and full product Design Document
 - Aiming to go further than a vertical slice and complete a full product within 6 months.
 - Full product will expand on the proof concept by adding several customisation features and at least part of the Riff Realm tuition course.

Use of MR, Hand Tracking & AI

- The app uses MR throughout to blend music tuition and notation with the users real guitar
- The app uses hand tracking for UI interaction and coarse tracking of guitar position.
- Scope to use LLMs fine tuned on music theory to generate chord progressions, riffs and scale exercises.

Funding Requirements

- No funding sought previously. Self funded so far.
- Seeking:
 - \$60k for 6 months of developer time
 - \$20k for creation of Riff Realm guitar tuition course for stereoscopic camera lenses, studio time and assistance in editing

The Developer

- Nick Hoddinott. Software engineer with 23 years experience in developing enterprise software in many languages on many platforms.
- 10 years experience in developing real time, mission critical, industrial 3D visualisation software.
- Experienced Unity and C# developer
- Huge VR & MR enthusiast. Owned every Oculus / Meta headset.