

Michael Coleman & Irish Music's Early Cultural & Sonic Fidelity: A Creative Remix

Project

by

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Abstract

Michael Coleman, the preeminent Irish fiddler of the 20th century, profoundly shaped the landscape of traditional Irish music through roughly 80 commercial recordings produced between 1921 and 1936. These pioneering works, though revolutionary for their time, are marred by sonic imperfections—hiss, pitch wobble, and jarring accompaniment—that risk veiling his virtuosity from modern ears. This thesis unveils a creative project dedicated to restoring both the auditory brilliance and cultural integrity of Coleman’s oeuvre.

Employing advanced AI stem-separation techniques, I meticulously extracted his fiddle tracks from their oft-discordant accompaniments, overlaid them with historically informed piano parts of my improvisation, and remixed the recordings to achieve heightened clarity and fidelity. Informed by my expertise as a world champion accompanist and my deep-rooted Irish-American heritage, I curated a selection of pivotal tracks for enhancement, aiming to amplify their educational and cultural significance.

The outcome is a collection of revitalized recordings that pay homage to Coleman’s enduring legacy, proving AI stem separation can be a useful tool to correct recording limitations of the past while rendering music more vibrant and accessible to contemporary listeners.

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Introduction

Raised in a vibrant Irish-American musical family, I was steeped in traditional Irish music from my earliest years. My childhood unfolded as much amid the lively pubs and festivals of Connecticut and New York as it did on playgrounds, where I joined my parents—my father, a deft fiddler, accordionist, and composer, and my mother, an accomplished flutist—in the spirited rituals of Irish trad celebrations. Amid these experiences, one memory recurs with striking clarity: introducing myself as “Colman” often provoked knowing smiles and nods to Michael Coleman, the iconic Irish fiddler. By age ten, I was beginning to grasp the mythic resonance his name held within the trad community. This project emerges from that intimate connection, driven by a central inquiry: What distinguished Michael Coleman to inspire such reverence, and how might his legacy be rekindled for contemporary audiences?

Born in 1891 in County Sligo, Ireland, Coleman arrived in America in 1914, carrying with him the exuberant Sligo fiddle style, characterized by a bouncy feel and slurred bowing. His recordings, beginning in 1921, rank among the earliest widely circulated artifacts of traditional Irish music, establishing technical and stylistic benchmarks that reverberated across generations. Yet, these works bear the scars of early 20th-century recording technology—78-rpm discs, Stroh fiddles, and incongruous accompanists—rendering them discordant to modern sensibilities. This thesis intertwines scholarly analysis with creative innovation: leveraging AI and my expertise as a pianist, I endeavor to restore sonic precision and cultural authenticity to Coleman’s recordings, forging a bridge between their historical origins and today’s listeners.

The significance of this project lies in its commitment to safeguarding my Irish musical heritage—a vital thread of identity for a culture at the time rebounding from centuries of British suppression. By remedying both the sonic distortions of Coleman’s recordings and the cultural missteps of their accompaniments, I aim to render his artistry more accessible and pedagogically rich, paying tribute to the tradition that has indelibly shaped my own.

Background: Michael Coleman and Irish Music

Michael Coleman entered the world on January 31, 1891, in Knockgrania Townland, County Sligo, as the seventh child of James and Beatrice Coleman. Nestled in northwest Ireland, Sligo thrived as a crucible of musical innovation, renowned for its lively, ornamented fiddle tradition. Coleman’s father, a skilled flutist, and his brother Jim, an adept fiddler, enveloped him in this vibrant heritage. A formative encounter occurred when his father brought him to hear Johnny Gorman, an itinerant piper whose lilting, buoyant style imbued Coleman’s playing with a signature “lift”—an energetic pulse that would define his artistry.

At seventeen, Coleman abandoned formal schooling to hone his craft, competing in local music contests before relocating to Manchester and, in 1914, emigrating to America. Settling in New York, he took to the vaudeville stage, a springboard that propelled him toward his inaugural recordings with Shannon Records in 1921. The following year, he aligned with Vocalion, a move that enabled the production of superior 78-rpm disc recordings. By his death in 1945 at age fifty-three, Coleman had amassed approximately 80 tracks across diverse formats, from aluminum acetates to 16-inch

transcription discs. Priced at 75 cents—equivalent to roughly \$13–15 in 2025—these records were accessible to Irish immigrants, their influence rippling back to Ireland’s shores.

Before Coleman, Irish music bore the imprint of fiercely regional styles; his widely distributed recordings, however, ushered in an era of technical and stylistic convergence. Driving tempos, bowed triplets, and intricate ornamentation became hallmarks of his sound, elevating Irish music’s stature in America—where it had once been derided as mere raucous folk fare—and lending it legitimacy. As Ireland sought to reclaim its cultural identity, Coleman’s work catalyzed a revival, though not without consequence: the emulation of his distinctive style by younger fiddlers gradually eroded the diversity of regional traditions.

Sonic Challenges in Coleman’s Recordings

Though revolutionary, Coleman’s recordings bear the constraints of their era’s technology. Early 78-rpm discs introduced sonic blemishes—persistent hisses, pitch wobble, and unnaturally accelerated tempos—that mar their quality. His usage of the Stroh fiddle, a mechanical amplifier devoid of a traditional wooden body, yielded a piercing, nasal timbre, stripped of the violin’s resonant warmth. These imperfections obscure the brilliance of his virtuosic technique.

No less troubling is the accompaniment. While certain tracks—most notably those featuring Michael “Whitey” Andrews’s tasteful guitar—retain an inherent charm, many suffer from the contributions of lackluster session musicians. Pianists like Kathleen

Brennan often produced jarring, dissonant chords that grate against Coleman’s melodies. In several instances, the pianist lags behind his brisk tempos, resulting in a fractured, discordant texture. Peers in my traditional Irish music community, fellow fiddlers among them, concur: the droning, atonal underlay of piano or guitar renders Coleman’s genius needlessly elusive. These auditory distortions estrange contemporary listeners from his artistry, underscoring the urgency of this project’s restorative mission.

This endeavor unfolded across four distinct stages:

Audio Source Acquisition

My journey began with a consultation alongside my thesis advisor, Professor Daniel Rowland, to devise a strategy for disentangling the accompaniment from Coleman’s fiddle tracks. Professor Rowland emerged as the ideal collaborator, his singular expertise in audio separation honed through his role as head of strategy at LANDR—an AI-driven mastering platform—and fortified by his ties to cutting-edge audio firms like Audioshake. His knowledge of the field’s most innovative techniques proved indispensable.

Our initial task was to secure high-fidelity Coleman recordings. I reached out to a network of peers, including fiddler Andrew Caden, an intern at the Traditional Irish Music Archive—a vital repository safeguarding rare recordings, documents, and artifacts of Irish traditional music. Through his referrals, I connected with collectors possessing original 78-rpm discs, prized for their scarcity and historical value, often commanding

steep prices. When archival access faltered, Professor Rowland suggested an alternative: extracting lossless files from Apple Music to supplement our resources.

Fortuitously, Andrew Caden also directed me to DXWIZ 1911, a YouTube channel where an anonymous enthusiast had uploaded some of the finest audio restorations of Coleman's work circulating within the Irish trad community. After initiating contact, I learned the channel belonged to Aidan Morales, a software engineer with bachelor's and master's degrees from Michigan State University. Morales shared his motivation for restoring Irish 78-rpm records in a compelling reflection:

I also have a passion for restoring Irish 78rpm records. I was introduced to Irish music at a young age by my violin teacher, specifically the historic recordings of Michael Coleman. I was immediately drawn to the Sligo style of fiddling, its history, players, and technical brilliance. However, I was not satisfied with the 'remastered' sound quality of many of the reissued 78 rpm recordings, which often aggressively rolled off the high and low frequencies to reduce noise, or worse, were filled with terrible artifacts from digital noise reduction. To solve this problem, I looked for the best, cutting-edge techniques for audio restoration, which happened to be the 'XR' remastering process (short for extended range) developed by sound engineer Andrew Rose. In a nutshell, XR remastering corrects the tonal flaws of a recording by re-equalizing it with a very high resolution EQ curve of the same, or equivalent modern-day performance, in addition to the traditional de-click, de-crackle, noise reduction, and wow/flutter removal with the latest software tools. When applied to the recordings of Michael

Coleman and others, we can hear the performance as close to what it would have sounded like in person. (Morales)

Our correspondence blossomed swiftly, and Morales generously provided 22 WAV files: 20 of Coleman's recordings, complemented by two featuring James Morrison, Paddy Killoran, and Paddy Sweeney—esteemed fiddlers of the same era. I incorporated these additional tracks to enrich the reference pool for Audioshake's AI training. For the uninitiated, WAV files are uncompressed digital audio formats that preserve sound in its purest form, offering unparalleled fidelity—a critical asset for restoring historical recordings like Coleman's with accuracy and depth.

AI Stem Separation

The subsequent phase centered on determining the precise method for isolating the stems. For the unacquainted, stems refer to the discrete audio components of a recording—such as vocals, drums, bass, or, in this instance, fiddle and accompaniment—each representing a distinct layer within the composite record. Professor Rowland and I had initially contemplated training an AI model from scratch or employing AI-driven generative replacement, such as substituting the Stroh fiddle's brittle timbre with a more authentic violin resonance. Recognizing the Herculean scope of such an undertaking, we opted instead to survey existing commercial tools.

Professor Rowland first proposed Moises.ai, an AI-powered platform designed for stem separation. Leveraging machine learning, Moises.ai dissects audio into constituent elements—vocals, percussion, and instruments—yielding individual stems. The

workflow is straightforward: upload the file, await processing, and evaluate the outcome. Regrettably, as illustrated in **Figure 1**, the attempt proved futile; the top track emerged blank, signaling a complete failure to isolate any elements.

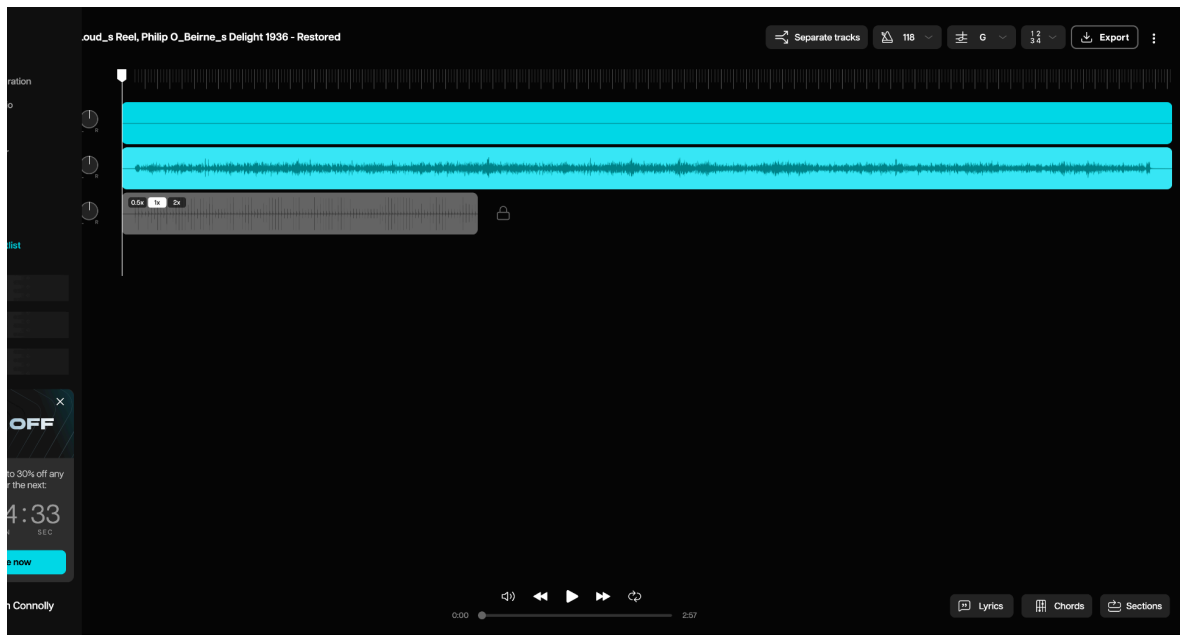


Figure 1

Undeterred, I turned to Lalal.ai, another stem-separation tool distinguished by its tailored algorithms for extracting specific instruments or vocals. My initial trial with its “Strings” feature yielded a similarly lackluster result, as depicted in **Figure 2.1**. A second attempt, using the “Piano” separation tool on a track with piano accompaniment, marked a partial success: the stems separated, yet significant bleed persisted, with piano traces lingering in the violin stem—see **Figure 2.2**. Encouraged but unsatisfied, I tested a 1934 recording, “Bonnie Kate / Jennie’s Chickens,” featuring guitar accompaniment, employing Lalal.ai’s “Acoustic Guitar” tool. The results, shown in **Figure 2.3**, were

strikingly pristine, the stems emerging with remarkable clarity. For the first time, the project's feasibility crystallized.

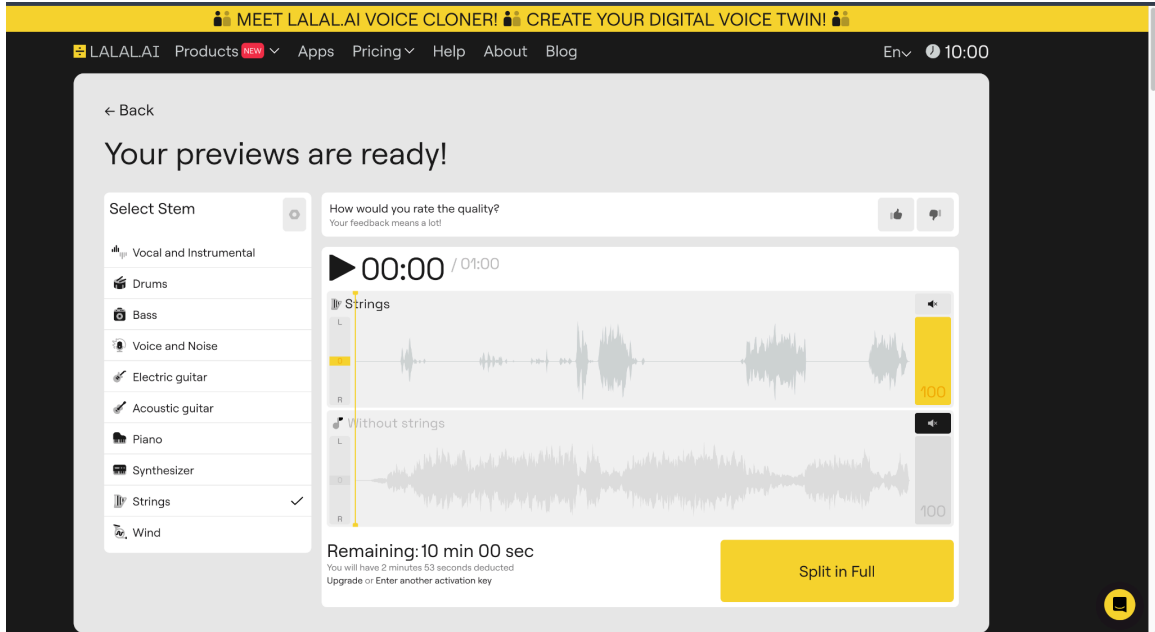


Figure 2.2

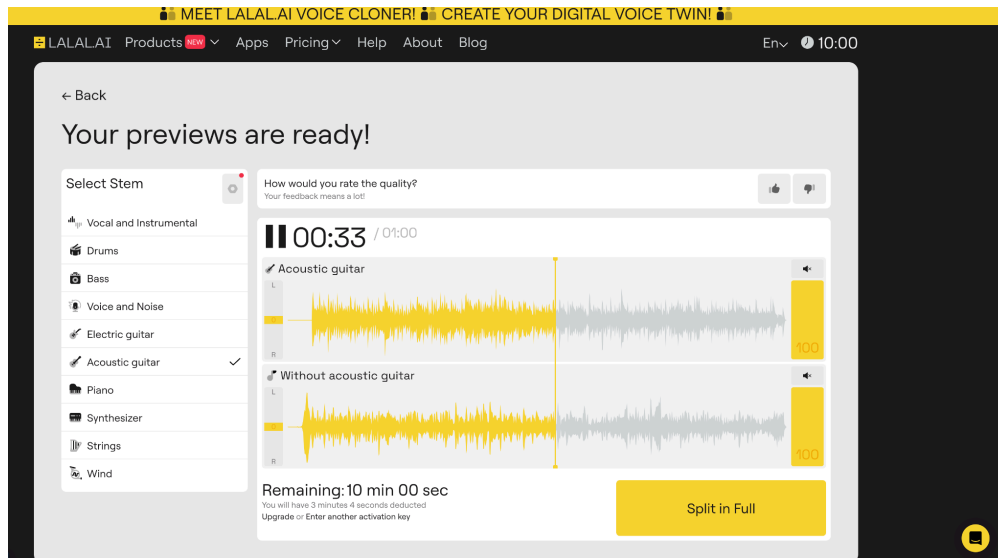


Figure 2.3

I presented these findings to Professor Rowland, who marveled at the separation quality for a 91-year-old recording. Yet, given that most of Coleman’s tracks featured piano accompaniment—and Lalal.ai’s “Piano” tool fell short of perfection—we resolved to pursue a superior alternative.

Professor Rowland recommended the AudioShake AI tool, which, though more expensive, is more commonly used professionally and generally yields better results. Thankfully, he arranged a deal with AudioShake’s CEO, Jessica Powell, who graciously provided \$200 worth of stem separation for free, granting me 30 credits to work with. Using Professor Rowland’s account, I uploaded all 22 tracks Aidan provided and downloaded the results. See **Figure 3**. While some tracks returned finicky results, with the piano coming in and out, the majority were surprisingly clear. At this point, I had successfully isolated the accompaniment.

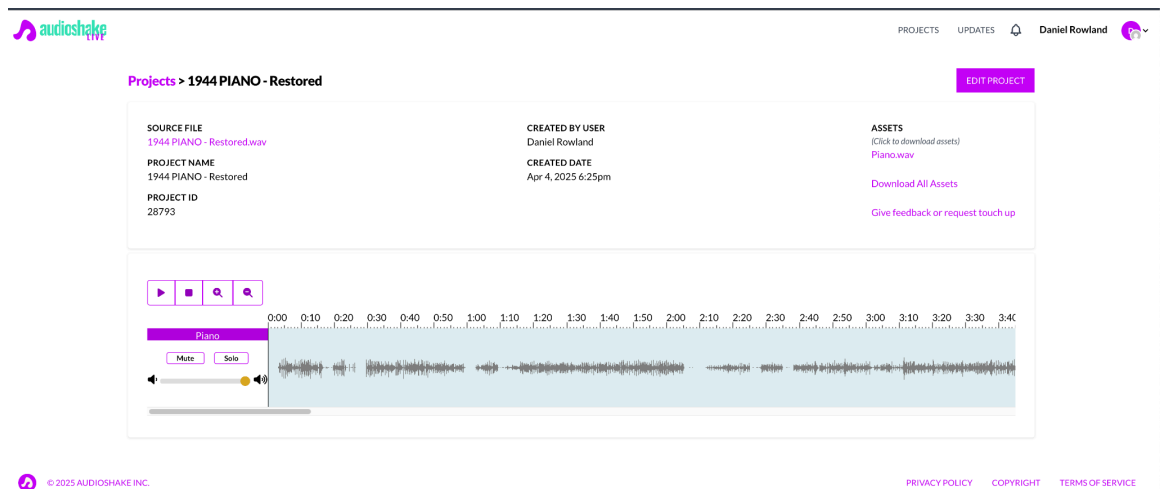


Figure 3

Violin Stem Extraction

The subsequent step entailed isolating the fiddle tracks with precision. I initiated this phase by establishing eight distinct projects in Logic Pro X, my preferred Digital Audio Workstation (DAW). Each project corresponded to a unique recording session from a specific year, a methodical choice that ensured tonal consistency across tracks from the same session during the mastering phase. Within each project, I integrated Aidan Morales's restored recordings alongside the isolated accompaniment stems procured from AudioShake. At this point, both tracks existed in stereo—a byproduct of Aidan's remastering, which transforms the original mono recordings by imparting stereo width to enhance their appeal for contemporary listeners. Stereo audio, characterized by its distribution across left and right channels, creates an immersive sense of spatiality and direction.

To reform the audio back to the original sound, I applied a “gain” plugin—an effect tool—to both tracks, converting them from stereo to mono. Mono audio, unlike its stereo counterpart, consolidates sound into a single channel, delivering an identical signal to both speakers. Next, I inverted the phase of the accompaniment track. See **Figure 4**. Phase inversion entails reversing the waveform's polarity, flipping its positive and negative amplitudes. This technique, when aligned with the original recording, effectively nullifies the accompaniment through destructive interference, isolating the fiddle in pristine clarity. With the cancellation complete, I bounced (exported) the isolated fiddle tracks, generated new tracks for the piano and fiddle stems, and transitioned to the mixing and mastering stages.



Figure 4

Remixing and Remastering

The mixing and mastering phase unfolded relatively simply. For each track, I began with meticulous gain staging to prevent clipping—ensuring levels remained below 0 dBFS, where distortion would otherwise emerge—and then applied subtle EQ and reverb enhancements, as illustrated in **Figure 5**. For the uninitiated, EQ, or equalization, involves sculpting the frequency spectrum of an audio signal to accentuate desired qualities or temper unwanted ones. Reverb, by contrast, introduces an effect that emulates the natural reverberations of a physical space, lending depth and dimension to the sound.



Figure 5

I briefly explored compression—an effect that narrows dynamic range—but, mindful of the 78-rpm recordings’ inherently constrained dynamics, I opted against it to preserve their natural vitality. The mastering process, which refines the final mix for distribution by optimizing tonal balance and loudness, demanded similar restraint. Using Logic Pro’s integrated Mastering tool, I employed delicate EQ adjustments and focused primarily on elevating the tracks to a commercially viable volume, eschewing aggressive intervention. With these refinements complete, I exported the finalized files.

Piano Overdubbing

Drawing on eleven years of expertise in Irish traditional piano accompaniment and my 2021 FleadhFest accompaniment title, I improvised new piano parts using my Roland RD-88 keyboard within Logic Pro X, harnessing Spectrasonics Keyscape and MIDI technology to achieve authentic, evocative tones. For the unacquainted, MIDI—Musical Instrument Digital Interface—enables seamless communication between electronic instruments and computers, relaying nuanced data on pitch, velocity, and performance dynamics. The resulting MIDI notes are visualized in **Figure 6**.

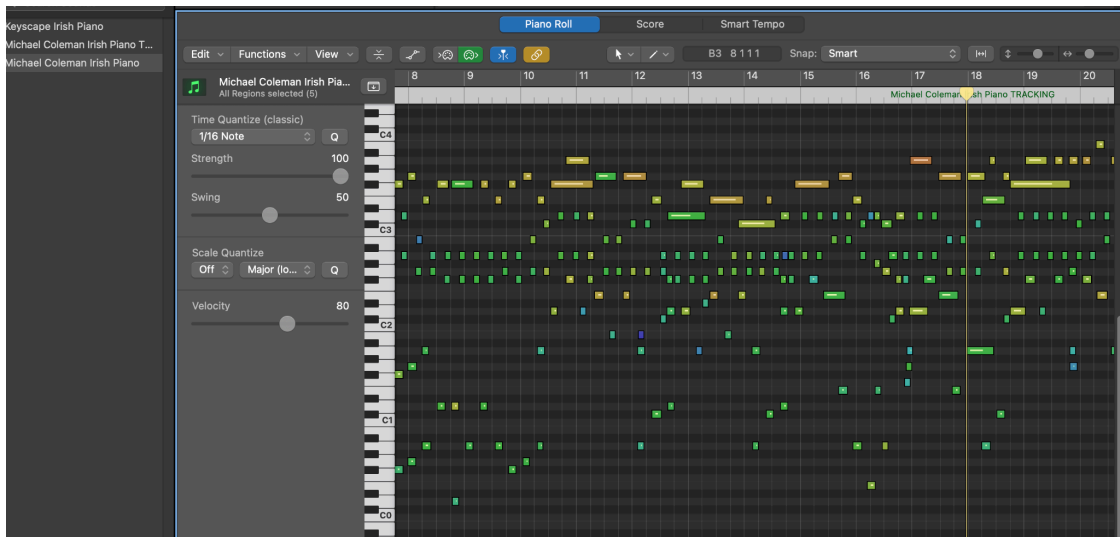


Figure 6

My first task was to curate the tracks for accompaniment. While I wanted to enhance all 22 recordings, imperfect separations—marked by persistent piano bleed into the fiddle stems—necessitated a selective approach; I ultimately chose 15 tracks for completion. For each track, I listened through, notated the chords by ear, and recorded each piano part in a single, unembellished take. I took care to fix the two principal issues

with the original accompaniment by making sure my chords aligned temporally and harmonically with Coleman’s fiddle.

Upon review, an immediate disparity emerged: the piano’s sound was too clean. Its clarity, expansive dynamic range, and stereo imaging clashed with the mono, constrained fidelity of Coleman’s recordings, creating an incongruous effect. To remedy this, I adjusted Keyscape’s compression and imaging parameters, narrowing the dynamic range and converting the output to mono for a more era-appropriate texture, as depicted in **Figure 7**.



Figure 7

Further refinement came through Logic Pro’s MatchEQ plugin, integrated into the signal chain with the original accompaniment as a spectral benchmark. MatchEQ analyzes a reference track’s frequency profile and recalibrates the current track to align their sonic signatures, ensuring tonal cohesion. By dynamically and spectrally aligning my piano parts with the original piano and guitar accompaniments, I achieved a seamless blend that obviated further mastering adjustments.

In total, this project yielded 81 audio tracks: 44 stems derived from the restorations, 22 remixes, and 15 Coleman + Connolly renditions—outcomes of which I am both excited and deeply proud. The complete track list is presented in **Figure 8**, with my overdubbed versions showcased in **Figure 9**.

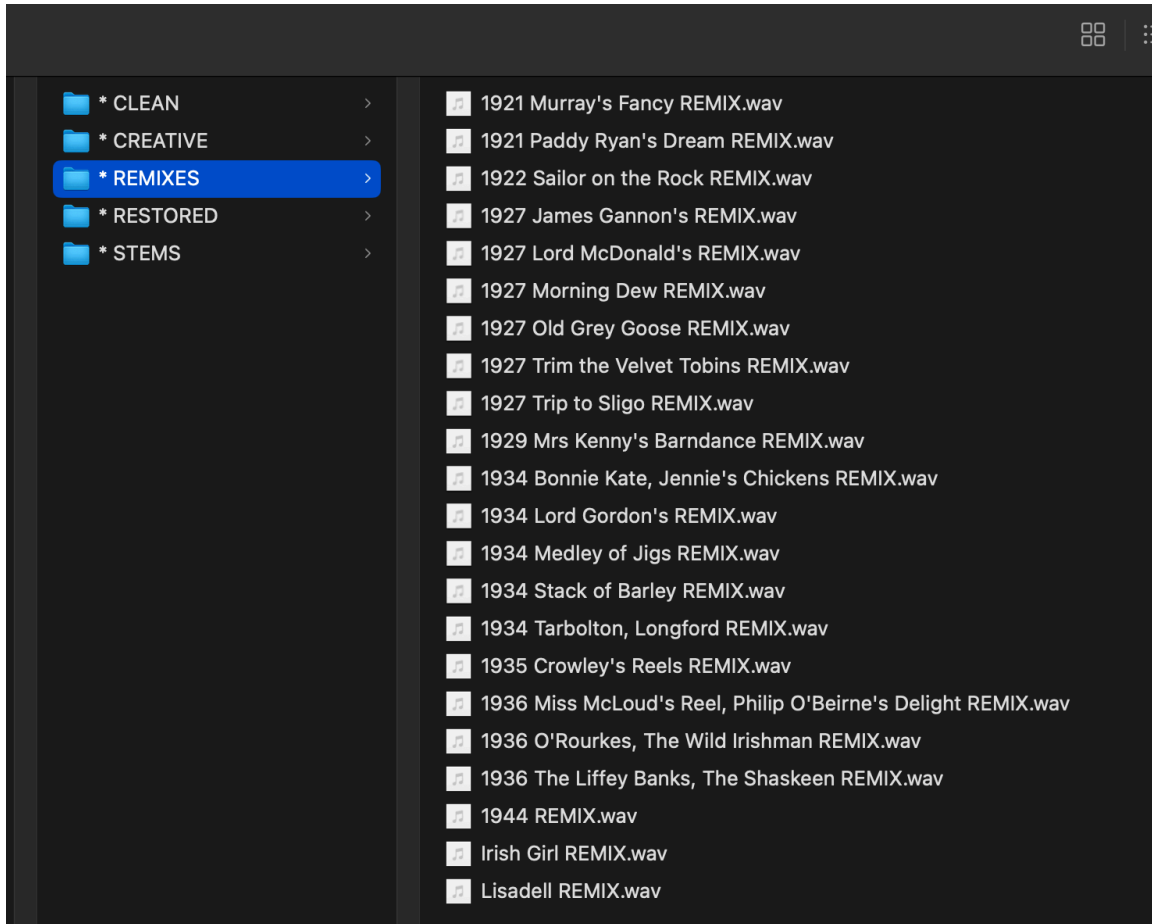


Figure 8



Figure 9

Discussion and Implications

The results are striking: “Trip to Sligo” pulses with a further crystalline clarity, Coleman’s triplets liberated from the shroud of noise; “Lord Gordon’s” reimagined timbre rings with authenticity; and “The Tarbolton” preserves its visceral vigor, enriched by harmonious accompaniment. Informal reactions from peers in the traditional music community brim with enthusiasm. One flute player, Jonathon Srou, exclaimed, “Colman, that’s so awesome. For years people have been have joking about doing this but you actually accomplished it!”

Sonically, this project pierces through the haze of early recording imperfections, unveiling Coleman’s technical mastery in vivid relief. Culturally, it restores fidelity by realigning the accompaniments with the idioms of Irish tradition, dispelling the original’s

discord. Pedagogically, the isolated fiddle stems stand as luminous exemplars for aspiring fiddlers, offering a pristine reference far surpassing the muddled originals.

Limitations persist, notably the specter of public domain constraints and AI's uneven success with older tracks. Future endeavors could broaden the repertoire, explore timbre-transfer innovations, and harness AI's accelerating evolution. With fortune, I may secure approval from the Coleman estate to distribute or monetize these works, perhaps bolstered by a grant from Comhaltas Ceoltóirí Éireann (CCÉ), the foremost steward of Irish music, song, and dance. Regardless, this undertaking reaffirms Coleman's indelible imprint on Irish identity, rendering his music more vibrant and accessible for generations to come.

Conclusion

This thesis fuses rigorous scholarship with creative innovation to exalt Michael Coleman's enduring legacy. By ameliorating both sonic imperfections and cultural misalignments, I have crafted recordings that speak vividly to modern audiences while preserving an essential pillar of Irish heritage. On a personal plane, it serves as a heartfelt tribute to my origins—a conduit linking my family's cherished trad roots to the timeless reverberations of Coleman's artistry. Evident throughout this endeavor is the potency of AI stem separation as a transformative tool, capable of redeeming the technological constraints of bygone recordings and revitalizing their vibrancy for contemporary ears.

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Appendix

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