

USING ARTIFICIAL INTELLIGENCE TO CREATE AND PROCESS MUSIC

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Annotation. The integration of artificial intelligence (AI) into music production and processing has markedly changed the landscape of sound design, composition and mixing. This paper examines the role of artificial intelligence as a key tool in contemporary music production, highlighting the complexity it brings to digital audio workstations (DAWs) through advanced plug-ins such as Ozone 10, Unison MIDI WIZARD and Nectar 4. The potential implications for artists, producers and the music industry as a whole are considered.

Key words: music production, Ozone 11, Unison MIDI WIZARD, Nectar 4, audio engineering

Introduction. Music production has historically been a field that combines talent and technology, with the latter constantly evolving to enhance the former. The advent of artificial intelligence has changed the paradigm, offering tools that can learn, adapt and assist in the creative process, making routine things easier.

Basic part. First of all, music creation will be considered, which is what the Soundful is best used for. This is a neural network that automatically generates music at the user's request. To create a track, just specify a genre and select one of the sub-genre templates. The system will quickly create a new recording that will be available for listening. The Soundful also has a vocal creation feature. To do this, find or write lyrics. Then use the text-to-vocal generator or record your own vocals, adding a personalized touch to your creation [1].

In the advanced settings, the tempo can be set by slider or by entering the exact BPM (Beats per minute) value. There is also a choice of song's key. The finished result is saved in the user's library. The Soundful interface is shown in Figure 1.

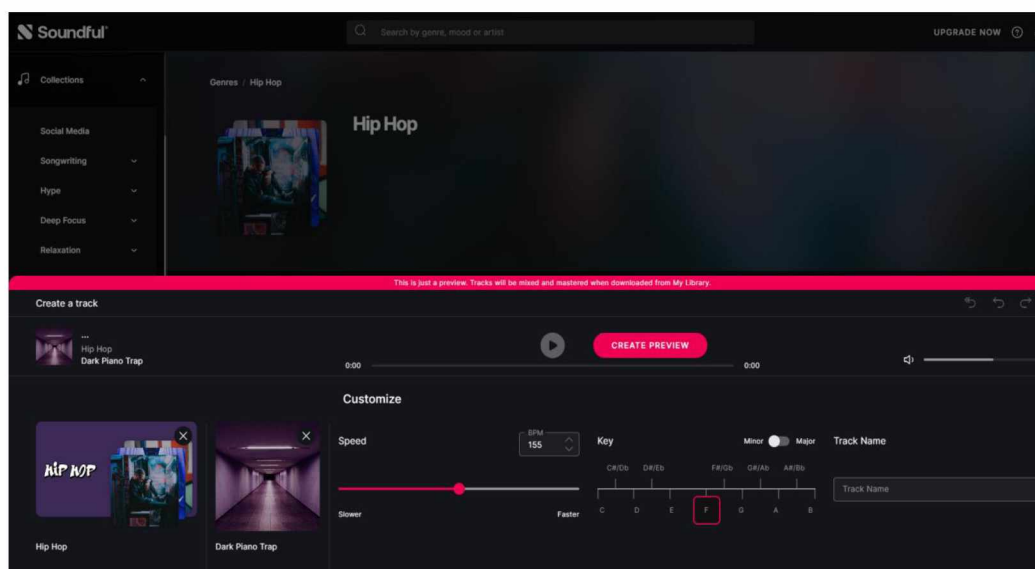


Figure 1 – Soundful

In case of choosing your own instruments for a melody, as well as tweak it, it's best to use a plugin for your DAW called Unison MIDI WIZARD. Based on the genre, tonality and BPM you choose, it can create both a chord sequence and a lead melody. MIDI WIZARD also features hybrid

mode. It is the next level, combining chord and melody algorithms and artificial intelligence to create all melody [2]. To hear the resulting melody, copy the resulting MIDI (Musical Instrument Digital Interface) to a synthesizer or musical instrument of your choice. The Unison MIDI WIZARD interface is shown in Figure 2.

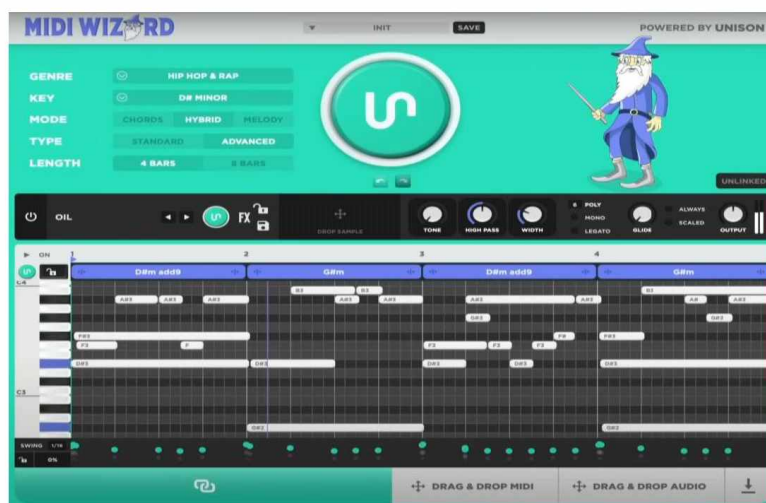


Figure 2 - Unison MIDI WIZARD

When it comes to processing the melody and the entire composition, some of the best plug-ins for this are those from iZotope. The most popular of them is Ozone 11. This plugin greatly facilitates the task of mastering compositions, artificial intelligence analyzes your track and processes it based on analysis, you can also choose the genre of your composition for more flexible settings, first the plugin equalizes the composition, then it adds or removes frequencies, then expands the sound so that it is not centered in the middle, after that, the plugin performs dynamic equalization, suppresses certain frequencies, and finally maximizes the composition, that is, adds volume to it so that it meets the standards of music services [3,4]. Ozone 11 is most often used for mastering an entire song or just a beat, but if your goal is to process vocals, Nectar 4 is the way to go. It also processes vocals based on artificial intelligence in the genre of your choice, and with the iZotope Audiolens application you can analyze the sound profile of any song, and these two plug-ins will process your sound based on that sound profile. The Audiolens plugin interface is demonstrated in Figure 3. The Ozone 11 plugin interface is demonstrated in Figures 4,5.



Figure 3 - Audiolens

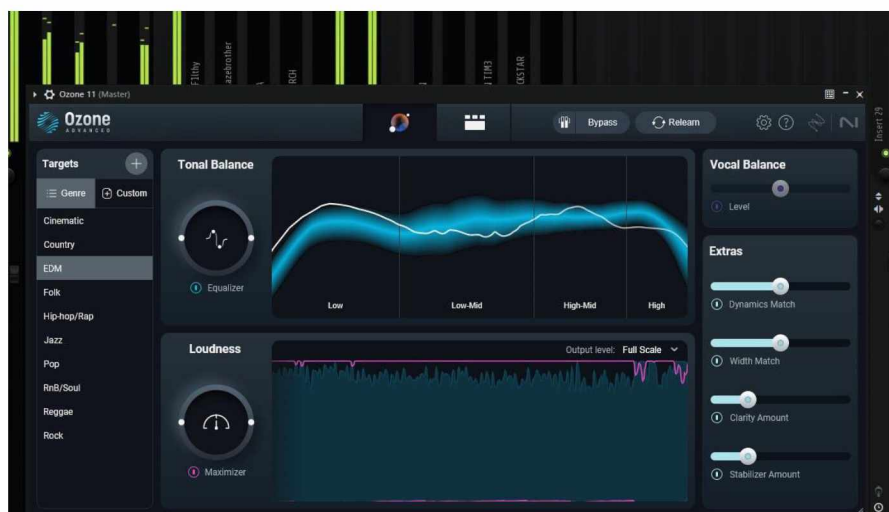


Figure 4 - Ozone 11. Genre selection



Figure 5 - Ozone 11. Processing steps that can be controlled

Conclusion. Based on the data obtained from the study, it can be concluded that nowadays everyone can create music, whether one makes it for commercial purposes or for oneself. Now, even without knowledge of musical theory and on inexpensive equipment, it is possible to create compositions comparable in quality and skill to those made in multi-million-dollar studios, all thanks to artificial intelligence. Also artificial intelligence helps producers with experience to simplify routine tasks, when there is no idea for chords or melody, you just use a plugin with artificial intelligence and it will write it for you, and you can refine that melody to sound perfect. But even more significant are mastering plugins because they can help aspiring producers learn how to process their compositions to make them up to standards, sure, AI can't always accurately guess the genre of your composition, but it's still significant progress. If AI continues to develop rapidly as well, in 5 years maybe it will be able to create hits based on a formula or completely process a song without adjustments.

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