

REALISTIC MIDI QUICK- START GUIDE

One of the hardest things to learn when working with MIDI is how to get the sounds that come out of the virtual instrument to feel like they are being played by a real player. In order to get a feel for what can be done inside the computer to achieve a higher level of realism, it is important to understand the ways in which a real human performance of an instrument varies from playing 'perfect notes.'



When notes are played through a virtual instrument, they can have a tendency to sound like they came from a computer. Why? Because computers are all about perfect little ones and zeros while humans are messy, imperfect, inexact, emotional beings.

One of the best ways to learn how to achieve a higher state of realism when using your virtual instruments is to simply look at the ways that a real human performance carries all that imperfection into music and then work to model that in your own computer performances.

Let's take a look at each of the human realism traits from the graphic on the previous page individually:

Timing Variations

Human players never strike notes at mathematically perfect moments. They lean ahead, relax behind, and subtly shift placement to create feel and movement. These variations aren't random - they reflect intention, phrasing, and emotional energy. Even tiny timing differences can dramatically change the character of a performance.

Velocity Dynamics

Real performances breathe through changing intensity. Musicians naturally vary how hard they strike, bow, pluck, or press, shaping contour and emotional weight. Velocity isn't just volume - it influences tone, articulation, and perceived intention. Dynamic contrast is one of the clearest markers of human expression.

1. Articulation Choice

Players constantly adjust how notes begin, connect, and end. Staccato, legato, accents, swells, and soft entries all communicate different intentions. These choices happen instinctively in live performance but must be chosen deliberately in MIDI. Articulation is the vocabulary of expression - it defines how a musical idea speaks.

2. Micro-Phrasing

Musicians shape phrases with subtle pushes and pulls, creating direction, tension, and release. This isn't about large tempo changes, but tiny inflections that make a line feel alive. Micro-phrasing gives music its sense of breath and narrative, guiding the listener through each moment with intention and nuance.

3. Tone & Timbre Shifts

Real instruments constantly change color depending on dynamics, technique, and context. A softer touch produces warmth; a stronger attack adds brightness or grit. These shifts happen naturally in acoustic performance but normally must be shaped intentionally in virtual instruments. Timbre variation adds realism, depth, and emotional clarity.

♥ Emotional Playing

Musicians continuously shape sound through subtle movements - bow pressure, breath intensity, vibrato, pedal work, and more. In virtual instruments, these expressive layers are often controlled through CC curves or modulation sources. They provide the emotional contour that transforms static notes into a living performance.

⚡ Intentional Imperfection

Human performances contain small inconsistencies that add character and authenticity. Slightly uneven rhythms, imperfect tuning, and organic fluctuations create a sense of humanity. These imperfections aren't mistakes – they are signatures of real expression. Embracing controlled imperfection helps MIDI feel natural rather than mechanical.

Pay Attention To...

- Adjusting the timing of notes: notes that are played by you will always feel more natural than notes that are added into the piano roll with a mouse-click or pencil tool.
- The velocity (strike intensity) of notes are very critical in MIDI realism efforts. Have a note with a high velocity that is played quietly and it will not sound so realistically. Typically, notes with a higher strike intensity are going to pair with a louder volume and vice versa.
- The use of articulations is one of those often-overlooked aspects of MIDI performances. If your instruments allow it, do not limit yourself just to 'short and long notes' here – explore the range of *how* an instrument can be played to get a more sophisticated performance out of it.

- If you take the Timing, Velocity, and Articulation methods we just combined and look at them across a large musical phrase, you will get better results. But, if you happen to create little micro-phrases within that larger musical phrase, you can kick your results up a notch for sure. Consider these smaller shifts that live inside of a melody, for instance, as an opportunity to boost your performance realism.
- If your instrument does not have a natural deviation capacity for tone/timbre shifts, consider using a plugin that introduces slight pitch variations over time. While control would be better, introducing these little pitch deviations will enhance realism, even when they are hard to hear. A professional player is normally going to be within a 5-10 cent range of the target tone.
- Lean into your MIDI CC controls to help expand on the emotional aspects of the performance. Understanding the control you have over your instruments can combine with multiple MIDI CC recording passes to squeeze out that glorious realism.
- Imperfections with MIDI normally need to be added by hand, which can be time consuming but still worth it. Because of this, look for areas that are key for this kind of thing – typically you will want to use this in parts of the song where an instrument is pushing its limits, whether that be a dynamic range or rapidly played notes or hard hits, et cetera.

Human performances carry a spark - a sense of movement, color, and emotion that can't be captured by perfect notes alone. As you shape your MIDI, let these concepts guide you toward performances that feel alive. Every small choice adds character, and small choices add up to a much more realistic performance.