

AI's first pop album ushers in a new musical era

October 3 2018, by Melissa Avdeeff



A promotional photo for the release of Skygge's first album 'Hello World.'
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Last December, the world ushered in a new era of popular music: human and artificial intelligence (AI) collaboration.

Musical eras are often defined by their dominant modes of production—analogue, electronic, digital—each bringing about new styles and ways of listening. This era is marked by the release of the first AI-human collaborated album, *Hello World*, by the music collaborative [Skygge](#). Skygge, led by composer and producer Benoît Carré and musician and tech researcher François Pachet, translates to "shadow" in Danish and was inspired by the Hans Christian Andersen story of the same name.

We now know that algorithms can learn [human bias](#), but can they also create highly creative and emotionally engaging music?

Although AI algorithms lack back stories and a creative process—the very things that often draw us into a piece of [pop music](#)—they make up for it with their ability to generate the unfamiliar and novel.

Instead of finding inspiration in the social and musical experiences of one person's life, AI draws on the outputs of thousands of lives. AI interprets these outputs as data, and can offer new melodies, instrumentations and other musical elements, based on statistical probabilities in a data-set.

AI produced music

Skygge was not the first to produce AI pop music. [Dadabots \(led by](#)

[producer Zack Zukowski and technologist CJ Carr](#)), released an album [for the heavy metal band, Krallice, last year](#). The result, *Coditany of Timeness*, was the first [neural-network-created heavy metal album](#).

AI music has existed in classical music styles for much longer. For example, researcher and musician David Cope explored algorithmic composition in the 1980s with the creation of his [Experiments in Musical Intelligence \(EMI\)](#) program. Others have been exploring using [AI to "compose Bach" since 1958](#).

In 1993, Cope released the Bach-inspired *Bach by Design* album using EMI. EMI's music has mostly been appreciated on technical instead of artistic merit. At that point, it seemed AI music functioned best with predictable parameters, like the predominantly rules-based music format of Bach's fugues.

Because of Cope's pioneering experiments, AI has had success producing fugues [that can pass as human-created](#), but that could partly be explained by a lack of familiarity with Bach's music by those who are tasked with identifying the human vs. computer creator.

But Skygge is the first pop music collaboration between human and AI producers.

Challenges exist when using AI technologies to create both classical and pop music styles. The mainstream familiarity of pop music, however, means that it is more difficult to "fool" listeners. The success of most pop artists relies not only on their musical talents but also their ability to craft stories and make connections with their listeners on a personal level.

Listeners become invested in the storytelling, and the extra musical elements that make pop music "pop." Statistical models generally lack

these features, even though the music itself is created from preexisting, human-created works.

'Hello World'

For *Hello World*, each contributing Skygge artist and producer interpreted the Hans Christian Andersen fable within a chosen genre and worked in conjunction with the AI technology. Skygge was funded by a European Research Council grant to explore AI in pop music production. To do so, they used [Sony's Flow-Machines](#) tools.

Instead of using neural networks, as done in [Google DeepMind's Deep Dream Generator](#), Flow Machines uses a probability equation, known as [Markov chains](#) to create catchy tracks. Neural networks require a substantial amount of information to produce an outcome, while Markov chains have the advantage of being able to produce statistical models from much smaller databases.

Based on the information imputed and based on previously recorded music, Flow-Machines suggests melodies, accompaniments and instrumentation. Producers can accept, reject and alter these suggestions to create their AI-human collaboration.

'Different than anything I've ever heard'

Using AI as a pop music collaborator has the potential to push the boundaries of familiarity into new territories. Novelty is often what shifts a song from being merely popular to genre-defining.

The unfamiliar is easy to find on Skygge. Pop-singer Kiesza, one of the contributors to *Hello World*, created the melody for her track "Hello Shadow" using Flow-Machines. [Kiesza said:](#) "This melody sounded

different from anything that I'd actually ever heard...I loved it from the beginning....Even though it's still really haunting...it's still really catchy."

Similarly, the eeriness of "In the House of Poetry" is undeniable, and enhanced by the ethereal voice of Kyrie Kristmanson. Flow-Machines took the familiar and translated it into something on the edges of the uncanny. Yet, at the same time, it is catchy. Skygge says they specialize in earworms —songs that stick in your head, becoming undeniably familiar, in spite of their initial unfamiliarity.

A new era of music production

As AI-collaborated pop music becomes more commonplace, it will challenge us as producers and listeners. The question will become much less about whether AI will take the jobs of musicians but more about how, or if, our tastes will evolve as quickly as the production technologies develop.

Technologies such as [Auto-Tune challenged many people's definitions of authenticity and humanity in music](#). Debates surrounding computational creativity, including AI music, take this a step further to challenge the assumption that creativity and music are something inherently "human."

AI will create a new era of music production, or at the very least, new musical styles. Skygge co-producer [Carré said](#): "At the beginning, a lot of people were afraid that the pianist and the drummers will be replaced, but it never happens this way...It's humans that find the ways to use [tech] to make interesting things."

We live in a culture of storytelling, not just in the lyrics and [music](#), but also through the artists themselves. The production of these stories may change, but our engagement with them will not.

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