

You call that EDM? Moritz Simon Geist's robots make the most technical techno

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- Electronic engineer/robot-musician conductor Moritz Simon Geist performs at the SXSW Innovation Awards.
Nathan Mattise
- Unlike other electronic/techno artists, Geist is obsessed with tactile instruments—he just builds them from old tech parts and then builds rigs to automate 'em.
Nathan Mattise
- Some of Geist's robots are based on the simplest of DIY instruments, like a set of toned water glasses.
Nathan Mattise
- During performances, Geist serves as conductor—he initiates various instruments/bots he has built and then occasionally bangs out rhythms on a MIDI controller to queue other noises.
Nathan Mattise
- Geist chats up Ars during some SXSW downtime.
Nathan Mattise
- Some of Geist's press photos let you see more of his creations than being in the audience during a performance allows.

- Here's the Ikea-ish set of shelves hosting various glitch robots Geist created.
D. Pinzer / MagnumPR
- Sparks on demand used to rhythmic effect.
David Campesino / MagnumPR
- Motorized chugs and clangs utilizing old tech hardware.
David Campesino / MagnumPR

AUSTIN, Texas—If you find Moritz Simon Geist's "Entropy" on Spotify, you might think nothing of it. The song is built upon repetitive, droning phrases that layer upon each other in ways you can't help but move your head to. Along with the rest of the tracks on *The Material Turn*, it wouldn't be out of place as deep cuts in the DFA Records catalogue, but they're less obviously electronic—no soaring synths or flourishes of rhythmic glitches here. Instead, "Entropy" has that breathy groove of an early song from The XX along with an overall industrial aesthetic like what music fans loved about Nine Inch Nails. "Entropy" is a dance track, but sinister, something that could soundtrack a highly stylized sci-fi flick or a dungeon level in a cool side scroller.

All that to say, Moritz Simon Geist wrote a catchy song. But what makes this remarkable is—unlike Hot Chip or Trent Reznor or whoever—Geist's music doesn't start from a synthesizer or emanate from his computer. He's "the world's only techno producer playing entirely with his self-made futurist robots," as the press release for his new EP, *Speculative Machine*, puts it. Glitchy tones on a track like "Maschyn" might come from a circuit board he printed himself. Sizzle sounds that listeners are accustomed to hearing from cymbals instead arrive from controlled bursts of pressurized air. The eerie melody of "Entropy" literally utilizes one of the oldest forms of a DIY instrument: water glasses filled with liquid to produce different tones, only this time they're played by a motorized set of mallets. And unless you see him performing live—as several new fans did during Geist's seven-performance run at

SXSW 2019—you may never know something extraordinary is taking place.

[embedded content]

Moritz Simon Geist's demo video for his music, showcasing the track "Entropy."

"There's a lot of experimental artists that put a lot of stress on the experimental part. For me, the music has to stand on its own," he tells Ars. "This artwork has a technical aspect to how it's made, but it has to be really good content-wise. I want to make this music good and on the same level as someone with a computer or synthesizer would program music. In the end, mine's just made with robots, of course—and they add different layers or special sounds you can't replicate with a synth or maybe replicate at all."

Maker music

Geist describes himself as a "performer, musicologist, and robotics engineer," but he's a musician at the core if the orchestral intricacies of his work don't give it away. He grew up with a classical music education—clarinet, piano, and guitar—and only started tinkering with electronics out of a desire to take those instruments further.

"I had no money, so I started building my own effects pedals for guitar," he tells Ars. "And this got me hooked on electronics and the engineering aspect, though I was 14, so maybe you wouldn't call it engineering. Eventually, I started studying electronic engineering and kept doing arts and music at the same time."

Geist would go on to pursue his burgeoning love of engineering to the max. He worked as a research engineer, in fact, until deciding to pursue music full time starting in 2012. At that time, he still had the concept of robotic music—uniquely crafted noise-making devices that could be played on demand, automatically—but not quite the toolset.

"I wanted the physical aspect of playing piano—you're touching things, you can touch the strings—it's tactile. I wanted to bring that to electronic music, computer-generated music. I was searching for the way to do the electronic sound, the techno music I love, but with a more physical aspect," he says. "[But to start,] I was crafting things in wood. When you do something once in wood, it's nice, but if you need 21 pieces..."

Today, Geist does much more traditional engineering work, just specifically focused on building instruments and automated means to play them. His interest in music long predates any aspects of his work that might fall under the Maker Movement, but the musician relies on many of that community's most common and popular hobbyist tools and techniques: laser cutters, Arduinos, 3D printers, printed circuit boards, etc. After a quick interview at SXSW, for example, he joined Ars to walk through the Exhibit Hall—and like a kid in a candy shop, he had to quickly split to chat up exhibitors offering up controllers in various form factors, from gloves to headsets.

"A good piece of art starts with a brilliant idea, but how you translate it into a full piece changes a lot depending on the techniques you have," he says. "Today it's very simple: the prototyping is very short. You have Arduinos, PCBs [printed circuit boards] made in China that you can ship over here... the development process is really quick and simple. It makes the fail-fast attitude in arts pretty easy."

*It's hard to believe #SXSW was barely two weeks ago. We may have some more stories stemming from Austin soon to come—here's a little preview of something that'll be on site this weekend. <https://t.co/0fdBE2oFdS>
[pic.twitter.com/Td8XxIxD19](https://t.co/0fdBE2oFdS)*

– Ars Technica (@arstechnica) April 5, 2019

A sound start

Geist's music doesn't leave much room for improvisation. Instead, he spends months creating his instruments—3D-printed kalimbas, salvaged hard drives or batteries now set up to click and spark—in order to build a specific set list or album. Sometimes, they're obviously based on a real-world analogue (he once built a robo-replica of a Roland TR-808 drum machine, for instance), but that's not always the case. One of his next instruments will be like a vibraphone, but “a futuristic version of that,” he says. Instead of differently toned bars arranged neatly on a flat playing surface, Geist imagines his bars, some three meters high, all over the physical space in a giant ambient robotic installation. Trips through places like the SXSW Exhibit Hall help him discover inspiration for how to do it.

Ars at SXSW 2019

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While Geist's more recent creations have obvious visual elements to them (LEDs or little bits of styrofoam to blast in sync), this isn't a chicken or egg situation between his bots and his music. Geist starts with a sound, typically coming from a robot, and builds out from there.

“In the beginning, I was trying to replicate music I had in mind that came from pop culture or electronic music. But that doesn't work well with robots because their capabilities are very limited,” he says. “So I realized when I started recording, I have to take the limited sound of the robot, listen to what it's doing, and develop the track from that rather than having a brilliant idea for an orchestra and trying to do it with the limited capabilities of a robot—it doesn't work out, that's too far away. [Historically,] this is

actually how electronic music was made—look back at the 808s and the big drum machine. It was very limited, but people took that sound and developed genres like hip-hop, electro, or techno out of that from a scope of limited sounds. Now it's iconic."

So far, the results seem to be speaking for themselves. Not only did Geist book seven performances during his first SXSW, he seemed to attract quite the audience. Ars saw NPR Music's Bob Boilen sneaking in and out of the SXSW Innovation Awards where Geist provided the night's music, and the musician landed in "Best of" festival lists everywhere from *Variety* ("your friends who go to museums might like him just as much as your mates who go to underground techno shows") to *Rolling Stone* ("see-it-to-believe-it EDM").

Ars also caught a show firsthand (see a few clips in the tweet above). We left impressed even though Geist couldn't bring *everything* from his workshop (bless that airport baggage workforce) and had to work with a limited visual palette accordingly. And when we asked the performer how crowds reacted to his first weekend headlining gigs, he seemed pleased, too.

"Something futuristic is going on at the stage, but they aren't sure what's really happening—it's like, 'What the fuck is going on? It's cool, but I don't actually know what's going on,'" he says. "I think that worked out."

Listing image by David Campesino / MagnumPR

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