

# The Economist

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## A technology maestro

A COMPOSER, inventor and educator, [Tod Machover](#) wears many hats. The son of both a pianist and a computer-graphics pioneer, his own career melds these two fields in a mix of music and technology. "My mom used to have us create music by finding objects around the house," he says, "so I always had the feeling that music was something that anybody could redefine depending on what you wanted to express."

This led him to modify his own cello at 14, using headphones and an amplifier. A few years later, while studying composition at New York's Julliard School in his early 20s, he learnt computer programming. "I definitely caught the computational bug," he says. In 1978 Pierre Boulez, a French composer, invited him to work at [IRCAM](#), a music research institute in Paris. Seven years later, Mr Machover joined the [MIT Media Lab](#), where he still teaches. He also leads the affiliated [Opera of the Future](#), a research group that explores ways "to help advance the future of musical composition, performance, learning, and expression".

Whether it's in composing experimental operas or in developing trailblazing new technologies, he's on the cutting edge of music. Over the years he's invented [hyperinstruments](#), which use smart computers to increase the virtuosity of some of the world's greatest musicians; he's created [music toys for kids](#); he's built an entire [orchestra of instruments](#) that anyone can play simply by gesturing, singing or playing a video game; and he's developed a composition software that enables the untrained to write music.

"I believe really deeply that creating artistic forms and especially music is very empowering," he says. "It's something that's driven me since I was a kid." While fine-tuning his latest work, a robotic opera called "[Death and the Powers](#)", Mr Machover is also busy thinking of ways to allow the general public to create their own [personal opera](#), too.

So what's next? After spending much of his career looking for ways to make music an active experience for all, Mr Machover predicts the future of the field is in personalisation. "I think more and more we will be developing music that can be customised for a particular person at a particular time," he says, "almost like a prescription."