

Kronos Quartet & Trevor Paglen: Sight Machine

Please note all timings are approximate and subject to change.

Brit Seaton looks into the artificial intelligence and data-driven inspiration behind the Kronos Quartet and Trevor Paglen's show.

In the advance towards automation, machine vision and artificial intelligence have become ubiquitous. Often hidden in plain sight, these systems are designed to detect, track and analyse our every move. But when they look at us, what do they see?

Bringing this pressing question into focus is *Sight Machine*, a multimedia performance by the acclaimed Kronos Quartet and visual artist Trevor Paglen, whose work is widely concerned with learning to see systems of surveillance and state secrecy. As David Harrington, John Sherba, Hank Dutt and Sunny Yang of the string ensemble perform, they are monitored by cameras attached to software running computer vision algorithms, utilised by object detection technology, self-driving cars, social media, and even guided missiles. Over the course of the show, this abstracted footage of Kronos Quartet is projected behind them in real-time, displaying their performance as seen through the 'eyes' of a machine.

Under usual circumstances, the yield of computer vision requires no human assistance, since those which Paglen identifies as 'invisible images' are created by machines, to be read by other machines. In *Sight Machine*, Paglen and his team of engineers intercept this autonomy and interrogate the ways in which these systems simplify an image in order to do something with it. The formal abstraction of images into code, as Paglen explains, results with biased values and political judgements being built into algorithms — which are presented, dangerously, as being scientific, universal and objective.

So why put a musical performance under the scrutiny of machine vision? 'Music, in particular, is very affective and communicative, but it's not a kind of communication that can be expressed in words or quantified,' Paglen says. Encoded in the language of strings (violin, viola, cello), fevered narratives of political unrest, war and technological advances surface in a number of the eleven selected pieces of music, with the performance featuring works by avant-garde pioneer Laurie Anderson, electronic trio Islam Chipsey, balafon player and composer Fodé Lassana Diabaté, and American composer George Gershwin.

Paglen's suite of machine vision software is arranged to draw on thematic parallels in each composition, such as that of George Crumb's ethereal protest music against the Vietnam war *God-music*, Raymond Scott's work of frenetic energy, *Powerhouse*, which found canonical use in cartoons of the factory accelerated to oblivion, as well as Terry Riley's *One Earth, One People, One Love*, inspired by the history of spaceflight and written in the aftermath of 9/11, for which Paglen's visual accompaniment features a pre-recorded video sequence considering a sky satellite as a vantage point for control.

Framing the distorted vision of algorithms with the consent of the subject, Paglen confronts the deception that these systems are usually deployed with. *Sight Machine* is a glance behind the curtain that conceals the inner workings of artificial intelligence and the uncanny world of machine autonomy. 'As we go further into the show, the algorithms are trying to determine what gender someone is and what emotional state they're in,' Paglen says. Broadcasting the computer-generated results in real-time exposes their ill-grounded logic: a musician being identified as '68.01% female', for example, demonstrates just how wrong these systems can be — or as Paglen puts it, 'how utterly absurd the entire premise of trying to algorithmically determine the meaning of an image really is.'

Sight Machine's musical finale is *America—Before the War*, the first part of Steve Reich's *Different Trains*. This work celebrates the promise of a connected world through expanding transportation infrastructure, and precedes a movement about the Second World War and the Holocaust, which isn't played by the quartet. In a re-interpretation of the first piece, Paglen questions the current exuberance around civilisation moving forwards through technology, presenting an untiring sequence of flickering AI 'training images'. 'It's looking at the ways in which all of our social media have been commandeered by

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AI systems, and are constantly being ingested to build models about who we are and what our proclivities are — to track, catalogue and identify us.’ Paglen makes plain that *Before the War* is haunted by the second movement: ‘What could possibly go wrong?’

‘In every computer vision system, you’re taking an infinitely complex and affective world, and reducing it to a series of very rigid numbers,’ Paglen says. ‘Looking through the computer vision eyes at a music performance shows how wide that gulf is between how human perception works and how computer vision works.’ *Sight Machine* meditates on all that is lost when machine vision looks at human experience, and as Paglen clarifies, it asks you as a viewer to reconsider any faith you might have in the aims and intentions of these invisible images.



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