# *Sci-fi* that *foretold* the *future*

They seemed far-fetched on screen, but these movie moments fast became non-fiction.

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**T**he lightbulb moment came during the movie I, Robot. In it, the robot says – thoughtfully – to an angry Bridget Moynahan: "Is everything alright, Ma'am? I detected elevated stress patterns in your voice." Watching that, two Portland, OR, teens asked themselves a simple, profound question: is it really possible for machines to detect feelings? I mean, could that really happen? A year later, their emotion-detecting algorithm won the team grand prize in the Siemens Competition.

The Portland pair – Matthew Fernandez and Akash Krishnan, who are both still in high school – were transfixed by imagined technologies that Hollywood made real. They saw them and didn't just applaud – they went on to translate them into hard science. But, long-term, can entertainment actually, accurately, be prophetic? Or does life inevitably imitate art?

Both. Filmmakers start with a kernel of truth, perhaps even consult with leading scientists and technologists, then take it to cinematic scale. They tell stories. The audience makes an emotional connection. And, inspired, they work to fulfill the prophecy. So it turns out we're already living in the future. Here are five movies that prove it. ➡

## Minority Report

"John Anderton! You could use a Guinness right about now." The ads calling out to Tom Cruise's character in Minority Report are actually based on existing technolgy, namely retinal scanners and real-time advertising, and mass personalized ads are already here. Check out Immersive Labs – their digital signage technology tailors ads to customers in real-time. Play Xbox Kinect with your housemates? Not only does it let users gesture to control the screen, just like John Anderton, but it could one day recognize who you are – and ask if you want a beer.

## Terminator

Wearable computing pioneer Thad Starner looks nothing like Arnold Schwarzenegger – except for the shades. Starner's home-hacked frames let him do web searches and see results right in front of his eyes, just like Arnold's cyborg character. Now, the real world has done Tinseltown one better: the University of Washington is working on LED lenses – more like contacts than glasses – that render digital images right in front of you. Or you could just turn to your smartphone: augmented reality apps like Layar and Wikitude act like annotated viewfinders on the world. This is the next generation, with no bodily alterations required.

## Total Recall

Been to the airport lately? You may have had flashbacks to Total Recall. In the 1990 film, Mars-bound passengers walked through a security scanner that showed X-ray images of their skeletons. In 2010, the Transportation Security Administration installed total-body scanners in many US airports. The 'millimeter wave' and 'backscatter' machines are meant to reveal any concealed objects, namely weapons, on a passenger's body. While movie Martians might have taken this in their stride, many US citizens bristled and protested.

## Harry Potter and the Sorcerer's Stone

Spotting an ex at a party. Realizing your fly is down. Spying on Draco Malfoy. We've all had moments when a 'Cloak of Invisibility' (like the one Dumbledore gave Harry) would come in handy. Such cloaks are sci-fi cliché, but recently, they've passed into the realm of the possible – even for Muggles. In his new book, Physics of the Future, quantum physicist Michio Kaku describes 'metamaterials,' which allow light to wrap around the body and reform at the other end, as if you don't exist. Scientists at Duke have shown the effect in action, and a new material called Meta-flex shows industrial promise. "Every physics textbook on the planet is now being rewritten," says Kaku.

## 2001: A Space Odyssey

When it comes to technological prophecy, few movies are more prescient than 2001: A Space Odyssey. Kubrick's visions fixed a gleaming future in our minds, and while the real 2001 wasn't quite as sexy as the cinematic version, we did have space stations and space shuttles. Beyond that, the iconic film even presaged eBooks and tablets: "He would plug his foolscap-sized Newspad into the ship's information circuit and scan the latest reports from Earth. One by one he would conjure up the world's major electronic papers... In a few milliseconds he could see the headlines of any newspaper he pleased." Then, there's HAL, the malicious talking computer. Today's artificial intelligence isn't nearly as humanoid, but IBM's Jeopardy champion computer, Watson, did make us all feel a little stupid Ⓖ