

Artificial Intelligence Basics

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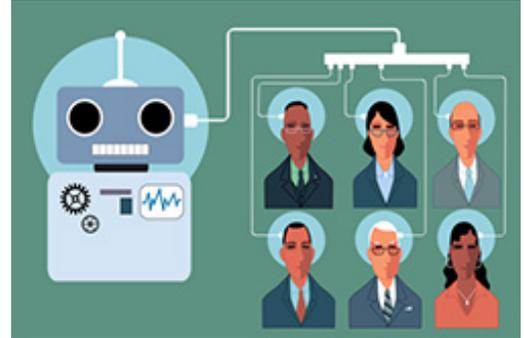
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Despite the grave warnings from Elon Musk and Stephen Hawking, the Artificial Intelligence (AI) apocalypse hasn't arrived quite yet.

AI, however, is advancing in new ways to help us. From predicting earthquakes to improving cancer diagnoses, here are AI's latest futuristic advances—plus the one that can help your business right now.

So what is AI, anyway?

You already know the Hollywood examples, from HAL 9000 in 2001: A Space Odyssey to the Borg in Star Trek, and Skynet in the Terminator. But real-life AI isn't quite that advanced yet (and, fortunately, not as bad-tempered either). AI falls into two basic camps: Strong AI and Weak AI. Strong AI is programming that can mimic the way the human mind works—and it doesn't exist yet. Weak AI are systems that can behave like humans, but they don't operate like a human brain. However, there are weak AI systems that are approaching an "in-between" level—ones that are inspired by human reasoning even if they don't quite work the same way—and that's where the most exciting research is happening right now.



Games and gambling

Whether it's picking the best horse or breaking records, AI is learning to beat us at our own games.

- Want to try picking a winning horse at the track? Start off by seeing what everyone else has to say. A "swarm" is a real-time online tool that gathers people to make a decision together. Last May the company Unanimous A.I. created a swarm for the Kentucky Derby. It predicted the exact superfecta, something none of the official Kentucky Derby experts did. The odds? A mind-boggling 540-1. ¹
- Remember back in 2006 when Deep Blue beat world champion Garry Kasparov at chess? Well, chess is complicated; but the ancient Chinese game Go is way more complicated. And last year AlphaGo, a division of Google's Deep Mind, faced off with Go world champion Lee Sedol and won. The game relies heavily on intuition, so AlphaGo used learning algorithms to practice by playing against itself.

Science

Can AI help us make scientific breakthroughs on this planet—and others?

- NASA has developed an AI meant for space exploration that could also save firefighters' lives. Developed in the Jet Propulsion Laboratory, AUDREY (a nickname for Assistant for Understanding Data through Reasoning, Extraction, and sYnthesis), can help firefighters find their way through smoke-filled buildings by tracking their movements. The tech stems from NASA's work towards exploring hard-to-map space terrain, such as looking for life in the icy ocean of Jupiter's moon Europa.
- The ability to accurately predict earthquakes could save countless lives. It's the goal of a new study that's using AI to crunch massive amounts of raw data gathered from seismic events and replicate them in a lab setting. By using unaltered data, seismologists hope that the AI can pick up predictive markers that humans haven't noticed yet. If the research is successful, they might be able to predict quakes within a decade. ²

Healthcare

Could AI help medical professionals save lives? Researchers are banking on it.

- At the Houston Methodist Research Institute in Texas, an AI was able to review millions of mammograms at a rate 30 times faster than a person. Incredibly, it had a 99% accuracy in interpreting diagnostic information found in patient charts. ³ And Stanford researchers are using “deep learning” AI to help spot cancerous moles and detect skin cancer in time to treat it successfully. They eventually hope to make it into an app that people can use at home.
- Everyone has heard of the potential accidents driverless cars can cause, but one owner used his to get himself to the hospital—and he credits his Tesla with saving his life. A man in Springfield, Missouri started feeling constrictions in his chest—so he turned on his Tesla Autopilot and directed it to take him to the nearest hospital. Turns out he had a pulmonary embolism and got medical care in time to make a full recovery. ⁴

Business

Eighty-five percent of customer interactions will be handled without a human by 2020.⁵ That’s why chatbots are the most important AI your company can invest in right now.

- Chatbots come in various forms. Many companies use them purely as a customer service tool to answer simple, common queries that don’t require nuanced interaction; if a bot gets stumped the customer is connected to a live service rep. Other industries, such as finance and travel, have developed more advanced bots that act as full-service assistants, whether it’s offering advice on how to pay off bills or booking a complete trip itinerary.
- If you’re developing a bot, remember to give it a little personality. (Take Bank of America’s bot, nicknamed “Erica”—a friendly name that riffs off their company’s own name.) It’s good to hire a copywriter to come up with the bot’s turns of phrase so that they sound human. Think of the process as if you were a screenwriter creating a realistic character. If your bot uses any visuals, make sure they’re consistent with your character, too. (No stock images of people wearing headsets!)

So don’t fear our robot overlords... yet. Whether it’s catching a disease in its early stages or negotiating a good price on a condo, AI could soon be making our lives much, much better. Living in the future is great, right?

[1] TechRepublic, [Swarm AI predicts the 2016 Kentucky Derby](#)

[2] Scientific American, [Can Artificial Intelligence Predict Earthquakes?](#)

[3] Houston Chronicle, [Houston invention: Artificial Intelligence to read mammograms](#)

[4] TechRepublic, [How Tesla Autopilot drove a man with a blood clot to the hospital, and expanded the autonomous car debate](#)

[5] Business Insider, [Why it's time your business went all in on chatbots](#)