Some day we will develop a computer so powerful that it will be able to beat the world's best players in a game of chess! Wait…what? You tell me this already happened! In 1997! IBM's Deep Blue defeated Russian grandmaster Garry Kasparov back in 1997! It was said that Deep Blue showed creativity and invention in its mastery of chess.

When I was a kid, I was told that computers couldn't be smarter than humans; that they couldn't think; that they could only do what they've been programmed by us to do. Now we have computers that "think;" we have neural networks and artificial intelligence. The era of human vs computer chess matches has long since passed. Humans are no match any longer. Grand champions can now be beaten using relatively pedestrian computer platforms.

We use computer simulations to explain our world. In my first job out of college, I wrote computer models that simulated the heating of steel in large industrial furnaces. The slabs of steel needed to be heated uniformly throughout its thickness and length; yet, not being able to directly measure the internal temperature of the steel necessitated that we model this heating using mathematical simulations.

Scientists routinely use computer simulations to predict the weather, the path of hurricanes, the pace of climate change - where its effects will be most felt and what those effects might be. Simulations are also used to predict population growth, demographic trends and the spreading of disease. As we evolve, the number of things we choose to simulate, and the quality of those simulations will evolve as well.

We thought that computers couldn't outthink us; we were wrong. Might we also be wrong to say that there could never be a computer that could simulate our lives? The simulation need not be perfect. It could be full of bugs and glitches. Look around – we see imperfection everywhere. As I've said before, if God were perfect, why couldn't she have created a better version of this world…a world without suffering, disease, hurricanes, war? Is this some bad and poorly tested beta version of the Universe? Why did God create so many seemingly pointless things? The character Evil, in the 1981 fantasy movie *Time Bandits*, alludes to this when he says, "God…Look how He spends His time! Forty-three species of parrots! Nipples for men (Terry Gilliam, Michael Palin, *Time Bandits*)!"

Glitches or not, you might think that we'll never develop technology sophisticated and powerful enough to simulate our lives. Such a simulation would require too much computing power, too much hardware, software and memory. Ok, let's think about this. The Wright Brothers managed to just barely get off the ground in flight in 1903. Just sixty-six years later, we were walking on the moon. Unbelievable! The computers from even a single generation ago can't hold a candle to today's machines.

If we allow for the possibility that eventually we will develop computers powerful enough to run a simulated world; even if the eventuality does not take place for thousands of years in our

future…then we must accept the idea that it may have already happened and we are living in such a simulation right now.

In 2003, philosopher Nick Bostrom posited this argument that we could be living in some more advanced civilization's computer simulation...and it's not as far-fetched as you might think. Many noted scientists can't deny the possibility. Neil deGrasse Tyson, host of the PBS Cosmos series and director of [New York's American Museum of Natural History's] Hayden Planetarium, "…put the odds at 50-50 that our entire existence is a program on someone else's hard drive. 'I think the likelihood may be very high,' (Clara Moskowitz, Scientific American, April 7, 2016)."

Many scientists are skeptical of Mr. Bostrom's argument however. They fail to see adequate motive for such a simulation. Why would any future civilization want to simulate us? Although that might make for an interesting psychological study, I'm not too sure it's a strong argument as to why such a simulation might not exist.

Simulated-world scenarios are popular topics in science fiction literature and Hollywood movies. Truman Burbank, the protagonist in the movie *The Truman Show*, is unknowingly the main character in a reality TV show. Everyone across the planet is in on it except him. The town in which he lives is a giant TV set and its citizens are all actors. He thinks he's merely living his life just like everyone else, yet his entire life is constructed and on display for everyone's enjoyment.

In the movie *The Matrix*, intelligent machines create lives of virtual reality to enslave the majority of an unknowing humanity. Again, people think they're merely living their lives, yet, in reality, they're captives being used as used as an energy source for the machines.

So…might we be merely simulated beings in some computer program being run by an adolescent kid of a future civilization? Might we be unplugged merely because another outlet isn't available for some other flashier program or toy? Or maybe that kid forgot to plug us in and we're merely running on a great but dwindling battery?

What if it were proven that we are, in fact, living in a computer simulation? What would be the implications? Many scientists believe that the biggest immediate downside of having this knowledge would be that those running the simulation would likely pull the plug on us. Their experiment would be over and hence ultimately less interesting to them. It would be like us ending a medical experiment if the participants found out who was taking the real drugs and who was taking the placebos (Preston Greene, "Are We Living in a Computer Simulation? Let's Not Find Out, NY Times, Aug. 10, 2019).

Discounting that unfortunate end, what would be the implications if we found out that we were in fact living in a simulated universe? What might that mean for us? What might we do?

The Matrix movie shows us some options. One of the characters, rescued from the simulation of the matrix becomes disenchanted with the hardship and suffering of real life. He turns on his friends and cuts a deal with the machines in an effort to be re-enslaved and re-inserted back into virtual reality of the matrix. Watching the movie, you don't like this character for obvious reasons; but, if he hadn't been a traitor, if he had made this truth-denying choice without harming anyone else, could you blame him? Is his choice pragmatic or should he be guided by the search for truth? What would you do? Keep in mind that before you choose the path of truth, you must understand that everything you've loved in the simulated virtual reality – your partner, your children, your friends – doesn't exist in the real world outside the matrix. Would you be willing to give all that up in the name of truth?

Is there a God? Is there intelligent life elsewhere in the universe? These are big questions that, regardless how you answer them, the implications are almost overwhelming to imagine. Might we be living in a computer simulation? That's actually a showstopper too.

Realizing that one's existence is merely part of a computer simulation would likely lead to widespread panic, despair and nihilism. If this is a simulation, then what do our concepts of this world vs heaven, this life vs afterlife, God vs. no God, love vs. hate, even mean?

Reflecting upon this, and after calming down somewhat, I see some meaningful parallels in the sacred Hindu text the *Bhagavad Gita*. In this story we have Arjuna, a member of the warrior Kshatriya caste on a battlefield. He is accompanied by his charioteer who happens to be none other than Lord Krishna, an avatar of the great Hindu god Vishnu. Arjuna scans the battlefield and sees some of his cousins and friends on the opposing side. What does he do? Ultimately, lacking control and facing uncertainty, he must make a choice.

Similarly, we lack control in many aspects of what we call reality and we are always faced with uncertainty. This can result in having bad things happen to good people. Yet, despite possibly being in a computer simulation, we, like Deep Blue, have the ability to think and make creatively empowered choices in what we do. Is this what ultimately gives meaning to our lives, simulated or otherwise?

In some translations of the *Bhagavad Gita*, a clue to the meaning and significance of our existence is given in the very beginning of the text when it describes the battlefield as a field of sacred duty. Krishna instructs Arjuna to do his duty. This is one of the principal themes of the text - choosing to do one's duty, choosing to play one's part, in the midst of a beautiful, sacred, interconnected and interdependent cosmos.

We are either in a simulation or we're not. Like Arjuna, faced with this uncertainty and lack of control, what are *we* to do? We could choose venture forth into that uncertainty and do our duty. We could choose to play our part in this game of uncertainty – and relish the opportunity to be along for the ride and to be a part of whatever it is.