The Duality of Big Data: The Angel and the Demon

OVER THE LAST few years, we underwent a change in perspectives on the U.S. government — and more specifically, the NSA. It all started when whistleblower Edward Snowden leaked details of secret NSA data collection programs.
Since then, the media and security analysts (including myself) have debated back and forth concerning the usage of these collection programs and the subsequent analysis, which can all be rolled into one proverbial buzzword: big data.

BIG DATA'S POSITIVE CONTRIBUTIONS

Of course, none of these collection practices are new. Indeed, banner ad and cookie web tracking techniques have been in place almost as long as the Internet itself. Web developers utilize big data tracking techniques to provide a wealth of services to their visitors, including:

- Social Innovation and Foundations for Creating Smarter Societies: MIT is using big data analysis to research ways to build smarter cities that help reduce emissions, lower our cost of living, and increase the quality of life. What's more, it tracks user behavior through mobile devices without collecting any identifying information — providing an ethical balance between gathering necessary information and maintaining each individual's privacy.
- Healthcare: Big data also has a hand in researching cures and treatment options for cancer and Ebola.
- Environmentalism: Access to large data sets has expedited research into how severe global warming has become and helped researchers analyze the effects of pollution on our global environment.

So with all this good being done, what's our problem with big data?

CORRUPT PRACTICES WITH BIG DATA

The issue is that big data is a double-edged sword, and it's razor sharp on both sides. Although it has amazing potential to improve our world, it can easily be abused for the sole purpose of tracking behavior to make money or, even more evil, tracking dissidents to eliminate them.

Although many are unhappy about it, the way our government (and megacorps) currently use big data is tolerable. As a whole, the analysis is being done to benefit citizens, but there is still room for misuse.

Tech-savvy individuals with bad intentions can manipulate people through big data, and foreign governments — including Russia, China, and North Korea — have notoriously used it to control their populations.

Starving entrepreneurs may also use big data to game the system. The mentality of doing whatever it takes to succeed plays out in strange ways on the Internet. Much like the malicious hacker who leaked celebrity iCloud data to the public, there's always someone who wants what you have and is capable of stealing it.

Unfortunately, it often takes a large-scale hack, security breach, or loss of trust before the populace starts to critically think about data and how we use it. Any successful person knows you need to be preemptive to be efficient, and reacting only after a major incident is a recipe for disaster.

BIG DATA'S POTENTIAL FOR CHANGE

The key factor with big data is training our engineers and data scientists on ethical standards similar to the rigor we put into our legal and health systems.

While there's power and potential behind big data, the term itself simply describes datasets too large for a consumer rig to process. This puts up a

financial barrier to entry that would seem to favor wealthy individuals and organizations over the average Joe.

In the equation of big data, we are each a variable the analysis is attempting to solve. We're the ones who determine the balance of big data, so we must take it upon ourselves to control our data and release it only as we see fit. It's also our responsibility to learn how the organizations we support are using it.

Not all big data is bad, but it can be used for nefarious purposes. Personally, I'm optimistic about big data and what it can do for society, but I'm also realistic about the serious privacy concerns it presents. As a society, it's up to us to keep big data use in check.

Will the good coming from big data outweigh the bad? What big thoughts do you have about big data?