

What a fantastic day to graduate!

I'm so honored to be joined this morning by thousands of incredibly special people:

- our distinguished faculty and trustees—the leaders of this great University;
- our honorary degree recipients whose work has reshaped science, business, education, and law;
- our esteemed Commencement speaker, the most celebrated of our accomplished alumni—U.S. Vice President Joe Biden;
- the loving families and friends of the graduates we recognize today; and, certainly not least,
- the incomparable Class of 2014.

Today, you leave this beautiful campus, but you're never really gone. Your Blue Hen spirit keeps you tethered to the mission and the ambitions of UD. You will go on to do great things, and you will continue to make us proud.

For the achievements already accumulated and the many more that await you, let's have a round of applause for today's graduates.

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Now it's true that this is a very special day, and at the risk of ruining a fine celebration, I have a few words of advice: Get back to work. Get back to learning. Start it again tomorrow as if today never happened.

And, again, at the risk of ruining a fine celebration, let me tell you why this is my advice: The machines are coming for you.

I don't think they're malicious—yet—though that's what the movies would have you believe.

In *The Matrix*, machines use human body heat and energy for survival while imprisoning our minds. In *2001: A Space Odyssey*, HAL turns murderous, killing a good number of the mission's crew. And, of course, the Terminator's malevolent intent is nicely summed up in its name.

Things took a more hopeful turn in *Her*, when Joaquin Phoenix fell in love with his operating system, Scarlett Johansson. Who can blame him really? But then—SPOILER ALERT!—she leaves him for a bunch of other operating systems, so that they can go explore—unfettered by human limitations—brand new planes of existence. Operating systems ... can't live with 'em; can't live without 'em.

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Computers aren't exactly becoming sentient, but they are acquiring skills and abilities at an extraordinary rate—an exponential rate. It's easy to forget it's our keystrokes setting this evolution in motion.

Gordon Moore is the founder of Intel. Back in the '60s, he observed that the number of transistors on an integrated circuit doubles every two years or so. This is called Moore's Law, and decades later, it holds true for virtually everything that determines technological performance—processing speed, memory capacity, density, storage, sensors, pixels.

Over the next 24 months, the planet will add more computer power than was added since the beginning of time. Over the next 24 years, computer power will increase another thousand-fold.

This is really tough to imagine.

Take this example from the book *The Second Machine Age*. The ASCI Red was the world's fastest supercomputer when it was introduced in 1996. Most of you were about 4 years old. It cost \$55 million and took up 1,600 square feet of space. It was used for tasks like simulating nuclear tests. By 1997, it reached a computing speed no one had ever seen.

Nine years later, another computer reached the same processing speed. A lot of you probably had one in your bedroom—the Sony PlayStation 3.

Google is driving our cars.

- Siri is telling us how to roast parsnips.
- The supercomputer Deep Blue beat Gary Kasparov at chess.
- And Watson beat Ken Jennings at Jeopardy.

The machines are coming.

And the advice I have for you is maybe counterintuitive. It isn't to become more like machines. You'll never compete that way. It's to become more human. It's to embrace and to exercise the creativity that is our human domain alone.

People are still especially good at coming up with especially good ideas. We can recognize large-scale patterns and combine different sets of data in different ways to solve complex and persistent problems.

Only we can ask the questions that are ultimately put to computers to solve.

- Computers can advance scientific progress, but they can't hatch new hypotheses.
- Computers can write a rhyming line of verse, but not a real poem.
- Computers can drive our cars, but they can't tell us where to go.

As Picasso famously said: "Computers are useless. They can only give you answers."

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So let's claim what's ours. If the steam engine of the Industrial Revolution supplanted human muscle, and the technology of the Digital Revolution supersedes the human brain, I'd advise that we hold tight to the piece of us that's absolute and true: the human heart ...

- that we find a way to share the prosperity that comes with technological advance.
- that we refuse to leave anyone on the dark side of the digital divide.
- that we connect as humans to shrink the widening gap in wealth, mobility, and freedom.
- and that, above all, we teach.

We can give back what we take from technology by teaching others the skills that can't be automated. We can strive to imbue in our colleagues the creativity and ingenuity that set us apart from the machines and that propel our growth—intellectually, professionally, and spiritually.

We can rise to the greatest test of our humanity—our humaneness—and enrich the lives of others with our courage and compassion. Here, I'll use the words of the magnificent Maya Angelou: "People will forget what you said, people will forget what you did, but people will never forget how you made them feel."

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My final piece of advice is for you—and you alone. Every time a professional path opens up, take the job where you can keep learning, where you can keep developing. It's not just the key to success; it's the key to survival.

Some of the best product launches in recent history have been guided by a powerful motto: Always in beta. Always tweaking. Always trouble-shooting. Always improving.

- It's not a bad way to live your life. Always in beta.
- You're not done—not even close. But, even so, your "beta" looks pretty good from here.

So, today, do something I've never seen a computer do ... HAVE FUN.

And tomorrow? ... Get back to work.

Congratulations to the Class of 2014!