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Outline

**Humans need not apply**

* Humans have always used technology to make our lives easier.
  + tools used to reduce physical labor
  + specialization = economic growth and societal improvement
* Physical Labor
  + robots used to be very specialized and only effective in narrow circumstances
  + new robots (“Baxter”) can learn from watching and do all different kinds of work
    - no longer specialized - general-purpose
  + much cheaper and can be more effective - can replace human labor
  + can replace low-skilled jobs
    - cashiers, barista
  + technology is quickly becoming smarter and cheaper, outcompeting humans for jobs
* Luddite Horses
  + will new jobs be created as a result of new technology?
  + mechanical minds will also push humans out of the economy = a problem
* Automobiles
  + self-driving cars are the present
  + will replace humans, especially once they are better than us (which isn’t very hard)
  + major effect on transportation and logistics jobs
  + major incentives across industries to adopt autos
    - cheaper, more efficient
* The Shape of Things to Come
  + people will need to go through more and more education
  + white collar jobs aren’t safe
  + greater incentive to replace automated white-collar work
  + bots can teach themselves to be better than the programmers that made them
  + bots work the stock market and can write
  + lower demand for human mental labor
* Professional bots
  + In legal work, discovery can easily be automated - sifting through paperwork much quicker and more accurate than humans
  + doctors aren’t safe either -- Watson
    - humans doctors aren’t perfect -- machines can become better
  + Bots can learn from the experiences of all the other doctor bots
* Creative Bots
  + Creative professionals will always make a tiny part of the labor force
  + Artificial creativity is real
* Automation is already here -- this revolution is different; many of us will become unemployable -- new jobs will not necessarily replace all our current jobs

**The Impact on Jobs**

* AI, such a deep learning can process data and images at superhuman efficiency -- can be utilized in the health industry.
  + Had better success at identifying/highlighting particular features of scans than expert humans
  + Shows that even heavily specialized, cognitive, white-collar jobs can be replaced by automation
* 47% of workers are at risk of losing their jobs to automation.
  + workers in transportation, logistics, sales and services are at a particular risk
* Automation may lead to “job polarization,” in which highly-skilled and low-skilled jobs expand (doing non-routine work), while middle-skill jobs stagnate as a result of the ‘routine-ness’ of their jobs.
  + Routine jobs have seen less growth than non-routine ones since the 1980s, demonstrating that automation is already having an effect
* Most jobs may be able to be broken down into smaller, routine tasks, which will be replaced by machines
* Society is going to be divided into skilled and unskilled work, creating inherent socioeconomic divisions
* Technology has always created more jobs than it destroyed -- our lives/jobs just have to adapt around what machines can do and work on what cannot be automated
  + creates demand for jobs elsewhere
  + has a net positive impact on economic growth
  + hard to predict what jobs will arise as a result of new technology -- they are jobs that just don’t exist yet

**Only humans need apply**

* Humans will need to maintain AI and work ‘behind-the-scenes’
* Some jobs will always be better done by humans, such as those involved with empathy or social interaction
  + “caring” jobs have increased exponentially
* There is an ignored issue of the economic response to automation that makes everyone think automation will get rid of a lot of jobs
* Outsourcing may pose a bigger threat to jobs in America

**Is this time different?**

* Will require workers to learn skills more quickly than ever before, because of how fast technology can spread and be implemented today.
* It is important that people be given the resources to acquire new skills and switch jobs as automation replaces their old ones.
* Who knows?

1. By 2030 ish, around 90% of all the cars will be self-driving cars

2. I think some highly-skilled, PhD jobs in the medical field, such as surgeons and other general doctors will be replaced by more efficient robots doctors that make less mistakes. Lawyers may also be replaced, especially with their work in paperwork discovery.

3. Manufacturing jobs will experience a heavy decline, as well as jobs such as those in the federal government and information. Jobs in professional and business services and those in health care are increasing a lot as well.