

## Case Study

Robotics and Artificial intelligence (AI) are rapidly becoming viable alternatives to human labour. However supplementing human labour with machines is not a new concept. The world's economy has experienced exponential growth since the industrial revolution, mainly due to the adoption of industrial automation and harnessing a machine's tireless diligence with human ingenuity. Today, machines are mostly used for repetitive tasks like soldering car body parts or creating integrated chips that power PCs. Their ability to "think", in a very narrow sense, makes them ideal candidates for taking on repetitive tasks that require simple decisions. Automation has resulted in large scale job displacement, cotton weavers, telegraph operators, mainframe operators are not viable career options for anyone in today's economy. In the past, there were always alternative jobs on offer, and people could be retrained for new vocations.

The next wave of automation will be different. Robots are rapidly gaining more generalised intelligence. In the near future, hiring a robot will be a viable alternative to hiring a human, and we are already seeing signs of jobs we thought were safe being automated aggressively. The coming wave of automation will profoundly impact human society and our ability to find meaningful work.

People will need to become more specialized in certain fields. Humans teaching AI about new tasks and optimizing AI algorithms along with AI may be future career options. Once AI becomes capable of improving itself without human intervention things will become radically different and governments will need to take action to prevent widespread disenfranchisement for the populace.

Accenture's research on the impact of AI in the developed world indicates that AI could double annual economic growth rates by 2035 by changing the nature of work and creating a new relationship between man and machine. The impact of AI technologies on business is projected to increase labour productivity up to 40%. This will result in large scale job displacement, as well as creative destruction at scales never seen before.

- Estimated payback time for an industrial robot in 2016 is 1.5 years, and falling roughly 15% per year. [1]
- Net US job losses in manufacturing between 1998 and 2010 were about 6 million, 550k a year. [2]
- 50% of US jobs are at risk of being replaced by computer software and hardware over the next 20-40 years [3]

1. <https://www.ft.com/content/1dbd8c60-0cc6-11e6-ad80-67655613c2d6>
2. <https://fred.stlouisfed.org/series/MANEMP>
3. [http://www.oxfordmartin.ox.ac.uk/downloads/academic/The\\_Future\\_of\\_Employment.pdf](http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf)