The Work of the Future Will Be What Robots Can Not Do

Cindy Mareyta

Master of Information Technology, Swiss German University, The Prominence Tower, Jalan Jalur Sutera Barat Kav 15, Alam Sutera, Tangerang 15143, Indonesia

Abstract

Robot Revolution is coming. Recent business prediction warns that, in just five years of time by 2021, we can already see 6% of our workforce will be replaced by robots or artificial intelligence machines. Currently, the world is in the middle of crisis where changes take place every day. The world and technology move so fast we are having difficulty keeping up with all of the changes altogether. These changes can bring fortune and disaster depending on how we see and embrace it. Everyday new inventions are made from one person’s idea passed on to the next. This idea may bring new hopes to one person and may put an end towards someone else's works. Throughout this paper, a detailed analysis is discussed to cover on how these changes in technology affect the labor force. Some of the questions to help us begin this innovative research are: What are the riskiest jobs in the market that will be most affected by disruptive technology? A short overview of what jobs that will most likely survive through changes of technology in 5 years of time. What is the predicted outcome of IT related workers?

“Life is like riding a bicycle. To keep your balance, you must keep moving.” – Albert Einstein. Therefore, let’s begin this research by evaluating the possible association between jobs and technology.

Keywords: Robots; Technology; labor force; jobs; employment; projections; occupations

1. Introduction

First, I would like to thank Michio Kaku, a theoretical physicist who inspired me to begin researching and analyzing further about the importance of understanding how our jobs in the future may be affected by the birth and growth of artificial intelligence.

The jobs that we hold right now may not be valued the same or may not even exist anymore in the future. Therefore, it is important to also find meanings in life other than to stick to one particular job. We, as citizens, demand and need jobs - high paying jobs to be exact. However, we are sometimes ignorant to the fact that in order for us to get high paying jobs, we have to increase our working capitals and compete with robots thus, keeping up with the technology. Throughout this paper, I will talk about my research findings on what kind of jobs in what industry are affected by this change in technology and what kind of jobs will most likely survive in the next 10-20 years of time.

“Today, your cell phone has more computer power than all of NASA back in 1969, when it placed two astronauts on the moon.” – Michio Kaku.

There are many things that artificial intelligence are capable of doing like helping humans works faster, inputting data faster and responding to given tasks. This will lead us later to our analysis on how it will affect our works in the workplace.

However, before we move further into analyzing what particular jobs are affected by the growth of Artificial Intelligence, we first need to familiarize ourselves with the characteristics of this Artificial Intelligence.

According to Michio Kaku in his book The Future of the Mind and his research studies on artificial intelligence, robots still have capabilities that make them inferior compared to humans. This significance of studies will help us understand how we can sustain our jobs by understanding these capabilities so our work won’t be replaced easily by robots.

“Robots have very bad eyesight. They can see shapes but not object like faces, cups or chairs.” – Michio Kaku.
Artificial Intelligence has difficulties in recognizing patterns and common sense related to human behavior and the world. Robots don’t understand the feelings like humans do which may affect their decision making process related to human life.

It is very important to understand the risk associated between human labors and artificial intelligence which is now considered the big component of the disruptive technology. It is important to understand that all creations on this earth including artificial technology have some sort of limitation. This limitation helps us grow in many aspects in life. In fact, artificial intelligence is created because of our limitations as humans. We need help to achieve the impossible and that is why we continue with innovation. We want to innovate and conquer what we think is impossible. We, as humans, are filled with curiosity which leads us to our knowledge and innovation. With innovation of artificial intelligence in mind, we need to remember that it still has capabilities that differentiate them with us, humans.

This brings us to the second capability of artificial intelligence which is the lack of creative minds. Artificial intelligence can never be humans. It is programmed to mimic our works to do it faster and so on. However, it cannot innovate like humans. Therefore, the risk mitigation for this disruptive technology issue in the workplace is to seek out creative new skills that are needed and potential jobs that will require human works.

2. Methodology

The methodology used is from BLS- Bureau of Labor Statistics of United States of America Department of Labor - USDL-15-2327.

EMPLOYMENT PROJECTION PROCEDURE—2014-24

- The size and demographic composition of the labor force.
- Aggregate economic growth.
  - Produced by using the MA/US model, licensed from Macroeconomic Advisers, LLC (MA).
- Commodity final demand
  - Supported by the National Income and Product Accounts (NIPA)2 and the Input Output Accounts, both published by the Bureau of Economic Analysis (BEA).
- Input–output.
  - BLS developed historic input–output tables.
- Industry output and employment
  - Combination of data from two BLS sources: (1) the Current Employment Statistics (CES) survey and (2) the Current Population Survey (CPS).
  - Occupational employment and openings.
  - BLS develops a set of industry–occupation matrices. These matrices include a base-year employment matrix and a projected-year employment matrix.

3. Detail Analysis

According to the Employment Projection by Bureau of Labor Statistics of U.S. Department of Labor, these are the top six examples of the most predicted risky jobs by the year 2024 as shown in Fig. 1. The Locomotive firer who includes Diesel Locomotive Firer, Dinkey Engine Firer and Railroad Firer are in the highest position shown as the most affected occupations with 69.9 % decrease in demand. Other occupations such as electronic equipment installer, telephone operators and other business operators show decreases in demand as well and included in the top list of the riskiest jobs by the year of 2024.
According to the Employment Projection by Bureau of Labor Statistics of U.S. Department of Labor, these are the top nine examples of the most predicted jobs that have the highest probability to survive by the year 2024 as shown in detail in Fig. 2. The wind turbine service technicians are in the top of the list with prediction to increase by 108% in demand by the year of 2024. Many other occupations that offer services such as occupational therapy assistants and physical therapy assistants are also predicted to survive and highly increase in demand in 2024.
According to the Employment Projection by Bureau of Labor Statistics of U.S. Department of Labor, these are the top six examples of job market trend related to Information Technology by the year 2024 as shown in Fig. 3. Occupations that are related to Information Technology are predicted to increase in demand by the year 2024. The first example of occupations generated using the keyword “Information” in this data set is the Computer System Analysts which shows 20.9% increase in demand by the year 2024.

From this information, we can analyze that some jobs really are predicted to be impacted by the changes in technology. From the data above, we can see the business trend where administrative jobs and other occupations that are repetitious in nature are the riskiest and impacted ones to be replaced by artificial intelligence or robots by the year 2024.

Given these points, by studying this valuable information and understanding which jobs will survive in the year 2024, we can better envision our careers for the next five to ten years of time by expanding and investing on the right skillsets that are required to learn for the demandable jobs. Thus, hopefully with this mitigation of risk in mind we can reduce the risk in our workplace where our works and job industries are affected.

References