Carnegie Mellon University in Qatar
AI for Medicine

15-182/282 - Spring 2021

Assignment 4

Name: _____

Andrew ID: _____

Due on: April 22, 2021 by midnight

Instructions:

- This assignment has a maximum score of 100 points for both 15-282 and 15-182.

- You should submit your solution through Gradescope.

Question	Points	Score
AI and Employment	100	
Total:	100	

Problem 1: AI and Employment (100 Points)

Now that we understand AI in its technical context, let us try to understand one of the societal concerns surrounding it, namely, job security, and develop a related response.

To begin with, productivity gains in certain tasks through AI may entail that fewer (or no) humans are required for producing the same output in the same tasks. It is argued that this does not necessarily imply a loss of overall employment because wealth increases with increased productivity, which can increase demand sufficiently to counteract the productivity gains (Vincent C. Muller 2019). In the long run, higher productivity in industrial societies has led to more wealth overall. Major labour market disruptions have occurred in the past. For instance, farming employed over 60% of the workforce in Europe and North America in 1800, while by 2010 it employed around 5% in the EU, and even less in the wealthiest countries (European Commission 2013). In the 20 years between 1950 and 1970 the number of hired agricultural workers in the UK was reduced by 50% (Zayed and Loft 2019). In short, some of these disruptions lead to more labour-intensive industries moving to places with lower labour cost. This is an ongoing process (Vincent C. Muller 2019).

There is one caveat though. Classic automation replaced human muscle, whereas digital automation replaces human thought or information-processing—and unlike physical machines, digital automation is very cheap to duplicate (Bostrom and Yudkowsky 2014). It may thus mean a more radical change on the job market!

Conduct research on the subject of "automation and employment" and present your opinion on the matter in 1-3 pages. In your write-up, make sure to cite all the references that you have gone through during your research. The main questions that you may want to try to form opinions on are:

(a) Will the effects of automation driven by AI be different this time on employment?

(b) Do you think AI will fully replace certain jobs? If so, name and discuss one or two, if any.

(c) Do you think AI will create new kinds of jobs? If so, name and discuss one or two, if any.

(d) Do you think AI will replace medical doctors, not replace medical doctors but make a shift on how they work, or not replace medical doctors and not make any change on how they work? Discuss.

(e) Is there a need in your opinion to come up with codes of ethics for AI like the codes of ethics for medical doctors? Discuss.