HEFCS 7212 – Human and Ethical Factors in Computer Science

Name: Dongju Ma
Student ID: a1942340

Workshop Week 6-11 Free writing
Instruction: You can choose to answer ONE of the topics below.

*Please write for **20 minutes** about these topics. The key is not to stop and think...just keep writing!*

Please reflect on these ideas from material Week 6 to 11. What did you take away, what did you find interesting and how do you feel these topics relate to you?

1.How can critical thinking be applied to identify and address the biases in algorithms?

2. How can applying ethical principles from the design phase of a digital solution help prevent ethical issues and legal breaches in data handling? Provide an example of an ethical failure and suggest alternative solutions to address the ethical risks.

3.How do cultural differences affect the ethical considerations in technology deployment? Discuss the human ethical factors, such as privacy, freedom of expression and digital inclusion that must be considered when implementing technology across diverse cultural contexts.

4. Why are critical thinking and reflection essential skills for success in both personal and professional life, particularly in the field of computer science? How do these skills enhance decision-making, problem-solving and adaptability in a rapidly evolving technological landscape?

Answer number: 1.

Critical thinking may affecto the algorithms' using, according to the both sides of the thinking, like we could use an algorithm to collect some movie data for information, or we could use it for business searching engines. It's very important to be critical thinking when the out comes of the algorithms are having biases, for example, it's discriminating or racial.
When the algorithms may causing discrimination, like raical discrimination, a good way to use critical thinking is that you could judge the outcomes is ethical or not, and try to prevent the offensive outcomes. A good principle is that the algorithms

are not consciousness for its results, but the users are. So the biases can be inevitable, we could consider the algorithems are not perfect and we should improve it after criticized them. Those algorithems after improved still could make results with biases, so when the overseeing judge is excuted, there must be a third opinion to be reference.

Another good way to use critical thinking in developing is try to find a similar algorithm as compact, and then absorb their advantages and try to get avoid of disadvantages the compact have. The historical algorithms might be old but it could be effective and non-offensive. But still as the time flies, the biases show more divesities. When we use a historical algorithm as developing reference, we should consider the biases which didn't appear in old times. Just being moderate can makes the effort into the right way, being critical wouldn't harm to others.

For a conclusion, I think we should bring critical thinking in developing and reviewing algorithms in order to make the least biases for its outcomes. Although we couldn't prevent unpredictable biases but we could be moderate enough to improve the algorithems.