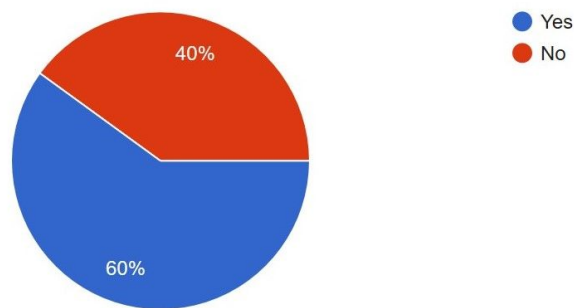Darren Yong Junhao (1P1), Zhang Han Jin (1A2), Gao Sheng Wei (1P1)
Group ID: 10-41

Written Report

Problem 1

Do you think that you are using your creativity in your everyday life. Please answer truthfully.

60 responses

- Yes
- No

40%

60%

Based on our survey with the working class aged 30 to 45, 39.7% of them responded that they were not using their creativity. (Observation) This is a very alarming issue
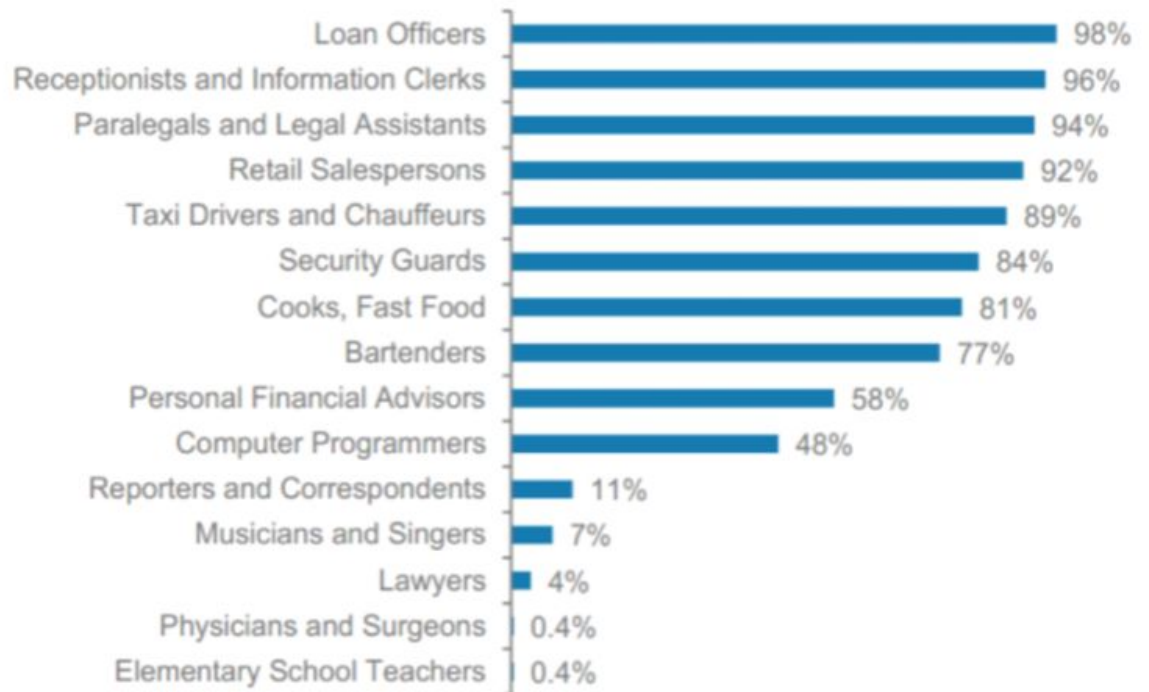
as creativity would be of utmost importance when in the near future of 2030. With many fixed algorithms structuring our society, creativity would be the only thing that would stand out in the future and be a competitive edge against AI. Creativity would be the source that would lead to new jobs. It would enable people to find new ways where they can contribute to the society. (Explanation) Based on survey by Linkedin Learning, creativity is one of the skills companies look out for the most. Workers with no intent of finding new business ventures would get the unvalued jobs and eventually get eliminated. Companies want to find the few creative workers who can think of methods to find new business. Study also shows that the level of creativity decreases when people get older. Most top painters, writers and composers peak around 30 to 39 years old. All these jobs require a lot of creativity and thus creativity is shown to peak at a young age. (Research)

Problem 2

Exhibit 8: Probability of a job becoming automatable

Job	Probability
Loan Officers	98%
Receptionists and Information Clerks	96%
Paralegals and Legal Assistants	94%
Retail Salespersons	92%
Taxi Drivers and Chauffeurs	89%
Security Guards	84%
Cooks, Fast Food	81%
Bartenders	77%
Personal Financial Advisors	58%
Computer Programmers	48%
Reporters and Correspondents	11%
Musicians and Singers	7%
Lawyers	4%
Physicians and Surgeons	0.4%
Elementary School Teachers	0.4%

Based on our survey, 43% of the working class we surveyed said that they were afraid of AI taking over their jobs in the future.(Observation) AI would take over a large percentage of blue collared jobs. Blue collared jobs make up ~25% of jobs in 2018 , according to the Ministry of Manpower of Singapore. Although those who were lucky enough to get more complex jobs that would be safe, there are many that are in danger of being replaced. These can be a great problem for them. As the Fourth Industrial Revolution is known to be the advancement of
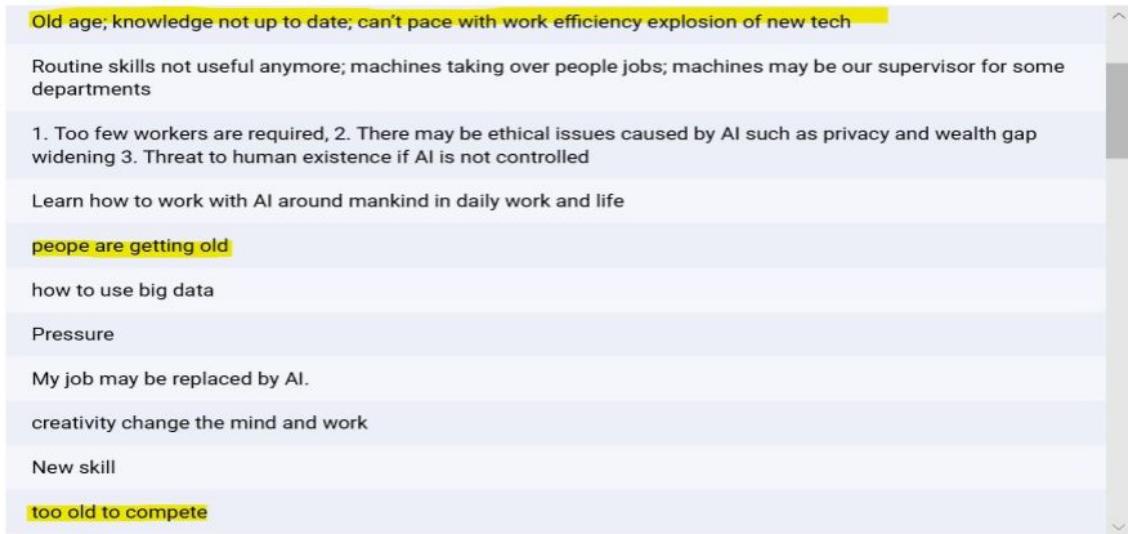
A.I, many people would be unemployed and thus causes the unemployment rate to skyrocket. When this happens, many would not be able to support their families. (Explanation) Saadia Zahidi, the Head of Education, Gender and Work at the World Economic Forum, cited predictions that in the future up to 47% of jobs may be automated away. Also, according to Forbes, many people actually want AI to take over their jobs as they are not willing to do their mundane tasks everyday. This results in them being replaced. (Research)

Problem 3

What problems do you think you might face in the workforce in 2030 when the 4th industrial revolution has reached its peak? State 3.

58 responses

Old age; knowledge not up to date; can't pace with work efficiency explosion of new tech

Routine skills not useful anymore; machines taking over people jobs; machines may be our supervisor for some departments

1. Too few workers are required, 2. There may be ethical issues caused by AI such as privacy and wealth gap widening 3. Threat to human existence if AI is not controlled

Learn how to work with AI around mankind in daily work and life

peope are getting old

how to use big data

Pressure

My job may be replaced by AI.

creativity change the mind and work

New skill

too old to compete

   In our survey, 22% of the people answered that they would be too old to learn in the fourth industrial revolution. (Observation). A study conducted by scientists showed that the rate of learning decreases as one grows older.(Research) As people grow older, their ability and desire to learn decreases. With AI replacing some of the more mundane jobs, people need to upgrade their skill sets for more sophisticated jobs. However, many people in our survey stated that they would be too old to learn a new skill. This is a problem as people who cannot upgrade themselves would most likely be replaced by AI

and would not have enough money to support their families. (Explanation) According to The Atlantic and The Washington Post, our ability to learn and absorb new knowledge peaks when we are young. At the same time, the level of curiosity and the desire to expose and learn new things also decreases when people get older. (Research)

Problem 4

In our survey, some people said that the wealth gap between the poor and the rich would be a problem during the peak of the fourth industrial revolution. (Observation) A study showed that the fourth industrial revolution would widen the wealth gap between the poor and the rich. As AI would only take over labourer's jobs, the poor who work as labourers would lose their job and earn much less money. However, the jobs of the rich would not be replaced as their jobs are mostly high ranking officials or senior management. This would make the poor poorer and would widen the wealth gaps. This could make the poor resents the rich even more and can indirectly lead to

riots. (Explanation) According to Oxfam, the world's eight richest individuals have the same wealth as 3.6 billion of the world's poorest and the world would see its first trillionaire in 25 years time due to the fourth industrial revolution. Klaus Schwab, founder of the world economic forum, stated that AI can further exacerbate inequalities and put the jobs of the low skilled workers at risk. (Research)

Problem 5

Based on our research, 30 people (~50%) sounded out that privacy would be a great issue when AI dominates the world   (Observation). This is a grave issue because privacy is a very important matter. Everyone values their privacy. A world without privacy would be very dangerous. A person would be easily stalked and his personal data would all be exposed to the outer world due to the advancing technology. Imagine a person with all his privacy exposed, he would be an easy target and many of his secrets would be uncovered. This would be happening

to all of us. In a nutshell, the world would end up in unsettling chaos were AI to dominate the world. (Explanation). According to Pricivillia, privacy is important as it maintains one's individuality and makes each one of us stand out from each other. Also, privacy would minimize scandals. According to Teachprivacy, personal data is used to make decisions. The respect of the other party's privacy would maintain a trusted relationship. Should privacy be breached, there would be no trust amongst people. According to the World Economic Forum, the Internet of Things would expose your private information to everyone so there would be no privacy and would be more prone to hacks and scams. (Research)

Underlying problem

Given that AI is advancing very fast and would take over many jobs, making it very likely for many people to lose their jobs in the near future either due to old age or just not willing to use their creativity or to upgrade their skill sets as shown in our survey where 39.7% of the people

responded that they were not using creativity in their daily life, how could we try to assist the blue-collared workers, as 28.7% (Baker, D., & Buffie, N.) make up the workforce, would be replaced by AI as AI is becoming cheaper and more prevalent, so that the blue collar working class would not lose their jobs in 2030 and years beyond?

This is very significant as blue collar workers will make up 1 third of the population in Singapore. Migration. (2016, January 20)This is a large number and if most will be unemployed, a lot of jobs would be lost and may cause side effects and impacts.

Solution 1

Our solution needs to call upon the help of the government by letting those people in the working class keep improving oneself.(Solution) They can organise courses and workshops that can teach new skills to them and thus be able to have a higher chance of competing

against AI and able to retain their jobs. Such courses or workshops could be subsidised by the government to make it more affordable to the workers. This can decrease the rate of unemployment and increase the employability and mobility of workers. (Elaboration) According to inc. This Morning, learning new skills such as coding helps you to improve oneself. It not only opens your mind, it makes you more well-rounded, increases your memory, and helps you get out of that dreaded comfort-zone. According to the World Economic Forum, one of the most important lessons is to strive everyday to be better than the previous day. (Research).

Solution 2

Our second solution is for AI to assist jobs instead of taking over them so that people at working age would not lose their jobs. (Solution) This would allow people to retain their job as AI robots would not take over the job. Instead AI can be implemented in the workforce. For instance, a cleaner could have a smart mop will absorb

just enough water for cleaning and would twirl on its own so the cleaner do not need to fork out as much energy. (Elaboration) According to Fast Company, AI will "contribute 15.7 trillion to the global economy by 2030" (Moran, G., & Moran, G. (2018, October 24). The great advancement of AI, if applied correctly, would "elevate the work", allowing humans to do "higher order of work"(Moran, G., & Moran, G. (2018, October 24). (Research) It also stated that AI would contribute to many fields of work such as healthcare and more. This would allow the burden of people's job to be eased by AI. Moreover, based on a research by TechRepublic, 70% of the people (Sanders, J. (2019, March 19)) feel that AI would be a great assistant to their jobs.

Solution 3

Our third solution is to use AI to find new jobs so that AI can take over the more physically demanding jobs while humans would still have jobs. Also we can help by improving them by teaching them skills through interesting ways such as Virtual Reality (Solution) This might sound strange and unachievable but it is not. This means that we can use Artificial Intelligence to find new fields of work. We can make use of AI to source different data and analyse them. Then, they can find potential jobs for those who lose their jobs due to AI. For instance, AI could reach inaccessible places for humans and the data or materials brought back can be analysed. (Elaboration) According to Forbes, the evolution of jobs are greatly due to the advancement of AI. Nowadays, AI is used to search for job vacancies and based on the qualifications and the requests of the applicant, it would find a suitable job for the applicant. In the future, it would be able to find new ways to earn based on conducting surveys on civilians and observing the recent market. Also, based on an article by Forbes, the bringing in of AI would create more

jobs for people too as people would have to be hired for maintaining AI and taking care of it. (Research)

Solution 4

Our fourth solution is to promote industries that utilise creativity such as painting and composing as these industries would not be replaced by AI. (Solution) This means that we elaborate on industries such as aesthetics as they do not require the use of AI. The purpose of art is to be able to express the emotions of the masterpiece and enjoy its inner beauty, be it art or music. Art would not be its true form if robots were used to create splashed on paint as there would be not feels to the artwork. (Elaboration) Based an article by Hufflepost, it states that it would be hard to imagine what a robot cannot do. A robot is capable of many things. However, it will never truly make a true piece of art. A robot can only function based on algorithms that were programmed. To

create stunning pieces of art, one must innovate and not rely on algorithms. According to the World Economic Forum, robots cannot perform jobs such as drawing and composing. (Research)

Solution 5

Last but not least, our final solution is to have more specialisation in jobs so that there would be more jobs available in future despite the AI dominating the world. (Solution) This means that we could have a greater variety of jobs available in one field of work. For instance, instead of creating a generalist in each field, be it in medicine or in financial markets, employees could be developed into specialists who will cover specific types of diseases or financial products, which allows the individual to spend more time to deepen his or her understanding of the subject matter and becoming an expert in the area. This could lead to major breakthrough in medicine or

science. (Explanation) Based on an article by Wisestep, specialisation in jobs bring many benefits, other than opening up more job vacancies. Specialisation in jobs would improve the productivity of the worker as he would not be stressed out by the copious workload. Moreover, the company would be able to find better workers as the specialisation of jobs would not require workers to be as well rounded so they only have to be good in one way. Also, according to BusinessDirectory, job specialization would be beneficial to the progress of the company. (Research)

Best solution

Our best solution is to keep improving oneself as it is the easiest and fastest way of letting the working class to find jobs and catch up with the pace of society. (Solution) This means that as society evolves, people can also catch up with its pace and would not be left behind. The workers can go to community centres where lessons on how to use creativity in jobs would be conducted so that they can compete with AI and not lose their job. For the

unemployed, communities centres would help them find new jobs according to their skills and experience. (Explanation) According to Business 2 Community, one of the ways to prevent yourself being taken over by AI is to keep broadening your knowledge and keep learning so that you would not be left behind by society.

Action plan

We would promote courses for blue collar workers to upgrade themselves.. In terms of mode of delivering the courses, we would recommend online learning instead of classroom lessons, as the online learning provides more flexibility to the workers. The online learning could also include videos and pictures. It is easier to understand pictures than words and the courses would be easier to understand and will be completed faster. Online learning tools are also becoming cheaper and more prevalent due to the advancement of technology. Online learning materials could also be accessed at any time. It can also overcome the language barrier easily as the courses can be translated into different languages using AI translation

tools. In a way, we are using AI to help people find jobs, which is our Solution 3. This solution is the most simple and fastest to implement.

Evaluators comment (manager of it in mediacorp and director of banking company)

The manager of it made comments that we should add skill based courses in our programme. Thus, we have finalised the feedback and original programme. The new programme consists of Problem solving and brainstorming, inventions and artistic creativity for creative thinking skills and maintenance and management of robots for skill based. Our programme still rely heavily on creativity.

In some areas, AI will completely replace human work, but in others, it will not. We can smartly use AI in our regular work, improve work efficiency, let ai do tedious work and human can have more time focusing on creativity. For example, in logistics warehouse like Amazon, robot can help worker to deliver and schedule products in warehouse. But still need skilled worker to operate them. So in AI age, worker need to learn how to use AI to work smart, rather than fearing them

10:19 pm

Citations:

- ❏ Why Creativity is the Most Important Skill in the World. (n.d.). Retrieved from https://learning.linkedin.com/blog/top-skills/why-creativity-is-the-most-important-skill-in-the-world
- ❏ Moran, G., & Moran, G. (2018, October 24). This artificial intelligence won't take your job, it will help you do it better. Retrieved from https://www.fastcompany.com/90253977/this-artificial-intelligence-wont-take-your-job-it-will-help-you-do-it-better
- ❏ (n.d.). Retrieved from https://stats.mom.gov.sg/Pages/Employment-Summary-Table.aspx
- ❏ Jobs and the Fourth Industrial Revolution. (n.d.). Retrieved from https://www.weforum.org/about/jobs-and-the-fourth-industrial-revolution
- ❏ Marr, B. (2017, March 03). The 4th Industrial Revolution And A Jobless Future - A Good Thing? Retrieved from
- ❏ Pylas, P. (2016, January 18). 62 People Own Half the World's Wealth: Report. Retrieved from https://www.nbcconnecticut.com/news/national-international/World-Economic-Forum-Oxfam-Edelman-62-Own-Half-World-Wealth-365672821.html]\]']\

- Schwab, K. (n.d.). The Fourth Industrial Revolution: What it means and how to respond. Retrieved from https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/
- Sanders, J. (2019, March 19). 70% of customer support agents believe AI will free them to focus on higher-value work. Retrieved from https://www.techrepublic.com/article/70-of-customer-support-agents-believe-ai-will-free-them-to-focus-on-higher-value-work/
-

- https://www.forbes.com/sites/bernardmarr/2017/03/03/the-4th-industrial-revolution-and-a-jobless-future-a-good-thing/#4eae296844a5
- (n.d.). Retrieved from http://www.privacilla.org/fundamentals/whyprivacy.html
- 10 Reasons Why Privacy Matters. (2019, April 01). Retrieved from https://teachprivacy.com/10-reasons-privacy-matters/
- Marr, B. (2019, March 18). Job Search In The Age Of Artificial Intelligence - 5 Practical Tips. Retrieved from https://www.forbes.com/sites/bernardmarr/2019/03/18/job-search-in-the-age-of-artificial-intelligence-5-practical-tips/#70b0051ff0e6
- Will Artificial Intelligence Ever Make Great Art? (n.d.). Retrieved from https://www.google.com.sg/amp/s/m.huffpost.com/us/entry/8008954/amp
- Job Specialization: Definition, Advantages and Disadvantages. (2019, August 01). Retrieved from https://content.wisestep.com/advantages-disadvantages-job-specialization/
- Ingraham, C. (2016, June 23). When you will most likely hit your creative peak, according to science. Retrieved from https://www.washingtonpost.com/news/wonk/wp/2016/06/23/when-you-will-most-likely-hit-your-creative-peak-according-to-science/?noredirect=on&utm_term=.8dc32fab71aa
- Elkann, L., Italia Independent Group, & Garage Italia Customs. (n.d.). Four ways to become a better leader. Retrieved from https://www.weforum.org/agenda/2016/02/four-ways-to-become-a-better-leader

- Brooks, A. C. (2019, July 01). Your Professional Decline Is Coming (Much) Sooner Than You Think. Retrieved from https://www.theatlantic.com/magazine/archive/2019/07/work-peak-professional-decline/590650/

- Kite-Powell, J. (2018, August 31). See How This AI Assistant Helps Recruiters Find The Best Candidates. Retrieved from https://www.forbes.com/sites/jenniferhicks/2018/08/30/see-how-this-ai-assistant-helps-recruiters-find-the-best-candidates/#430f4b883765

- DeLong, J. B., & University of California at Berkeley. (n.d.). These are the jobs robots can't do. Retrieved from https://www.weforum.org/agenda/2019/05/robo-apocalypse-not-in-your-lifetime/

- What is job specialization? definition and meaning. (n.d.). Retrieved from http://www.businessdictionary.com/definition/job-specialization.html

- Sanders, J. (2019, March 19). 70% of customer support agents believe AI will free them to focus on higher-value work. Retrieved from https://www.techrepublic.com/article/70-of-customer-support-agents-believe-ai-will-free-them-to-focus-on-higher-value-work/

- Migration. (2016, January 20). Two-thirds of Singaporeans in white-collar jobs by 2030. Retrieved from https://www.straitstimes.com/singapore/two-thirds-of-singaporeans-in-white-collar-jobs-by-2030-0

-