Ethical Evaluation Of the topic: The future of Employment, Jobs, and Work through Automation (Industrial Robots)

Liam Kennedy 21143508

Automation has been an ever-present part of modern-day technological advances, whether that's to due with self-driving vehicles, manufacturing, data entry and more.

Industrial Robotics has been one of the most implemented automation facets in society today. With it being shown that in 2020, there was a record 2.7 million industrial robots being used in factories across the globe, this being a 12% increase from the previous year[1].

This rapid inclusion of automation and in particular the use of Industrial robots has shown its moral ambiguity. Although the technology is being used to benefit society with advantages including increased efficiency of manufacturing, while also reducing the likelihood of human error and fatigue, it is also met with the decreased rate of employment of these factory-based industries, while the unemployment rate takes an incline.

This shows how the dramatic change in society is almost leaving people in the past while it ventures to the future. In the US alone, 13.9% of worker are in blue collar professions[2], While not all that percentage work in manufacturing it does show that a large margin of the working population is in and around the manual labour space, which is vulnerable to this automation evolution.

This although is juxtaposed to the increased job opportunity ironically for people in me and my team members degree. The increase in automation and industrial robots means the increase of employment for people with expertise in technology-based disciplines. It is a known fact that its professions have a large and ever-growing market, with many industries needing programmers, software developers, security analysts and more to support companies in this highly digital world. This is also a benefit for self employed workers and entrepreneurs to expand their own businesses. Like stated in my website self-employment rate in Germany steadily increased from 8.5% to 11.5% from 1991 to 2012[3]. These self-employed careers also benefited off the use of 3D printers, a form of industrial robot. These machines help many different industries ranging from the creation of architectural digital models to surgical human models.

The automation industry is one of both promise and discontent. Morally automation should be implemented to get rid of poor working environments, long, strenuous hours and limit the chances of work-related injuries and death. Although companies and industries should also have their own

[1] https://ifr.org/ifr-press-releases/news/record-2.7-million-robots-work-in-factories-around-the-globe#:~:text=Record%202.7%20Million%20Robots%20Work,%E2%80%93%20an%20increase%20of%2012%25 .

[2] https://resources.workable.com/hr-terms/blue-collar-worker-definition

[3] Sorgner A. (2017) The Automation of Jobs: A Threat for Employment or a Source of New Entrepreneurial Opportunities? Foresight and STI Governance, vol. 11, no 3, pp. 37–48. DOI: 10.17323/2500-2597.2017.3.37.48

set of morals for their working staff who are vulnerable to losing their job to these automated robots. There should be a process set in place that allow these workers to be able to find safe jobs and careers as they are not the reason for their unemployment but a consequence of an evolving society. There should also be a process in education that support younger generations into working industries that do not have a set time limit before they than will be vulnerable to losing their future jobs.

This morality can be shown through IEEE-CS SE code of ethics. With many points that closely relate to this topic and the responsibilities that engineers of these products effect society.

1. Public. Software engineers shall act consistently with the public interest.
- This in comparison to our topic basically saying that the role of automation and the engineering and development of these robots should be created with the interest of bettering society rather than consciously doing it for the payment with no care for how this may negatively affect certain groups of society.
2. Judgement. Software engineers shall maintain integrity and independence in their professional judgement.
   -Again, relatively similar to the previous point, there should always have the interest of everyone who is going to be affected by the product that is going to be made, knowing whether or not this may affect countless people should allow the engineer/developer to create the product that helps as many as possible.
3. Self. Software engineers shall participate in lifelong learning regarding the practise of their profession and shall promote an ethical approach to the practise of the profession.
   -Consistently and willingly understanding the problems these developers are dealing with will no doubt benefit the way they will solve whatever issue their dealing with. Having ethical responsibility and being aware throughout their career while also helping others understand the bigger issue to the products their creating. At this may avoid situations like this topic, where there is a fine line between advancing society with automation while also getting rid of countless jobs people rely on.

Overall industrial robots are a positive inclusion to society that benefit the fast-paced society we live in. There is although an ethical responsibility for industries to create an environment for their working staff to also transition with this evolving society to adhere to codes of ethics.

There should also be a mandatory education of ethical practises for many career paths but particularly the technology space as the evolution of technology will only ever become broader and control a majority of work in all industries. Instilling a sense of morality early on into the course should mean a greater sense of empathy towards any aspect of their work which should directly mean that they should have a greater sense to solve a problem that will greatly benefit society rather than having personal interests at heart.