

Industrial 4.0

Past, Present, Future



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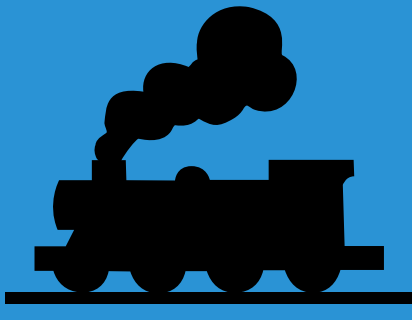
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IR 1.0

- Started around 1780s
- From muscle power to mechanical power which is derived from steam engine



IR 2.0

- Started around 1870s
- Mass production of goods, materials and machine



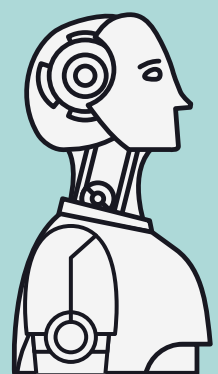
IR 3.0

- Started around 1970s
- Era of computing and digital revolution



IR 4.0

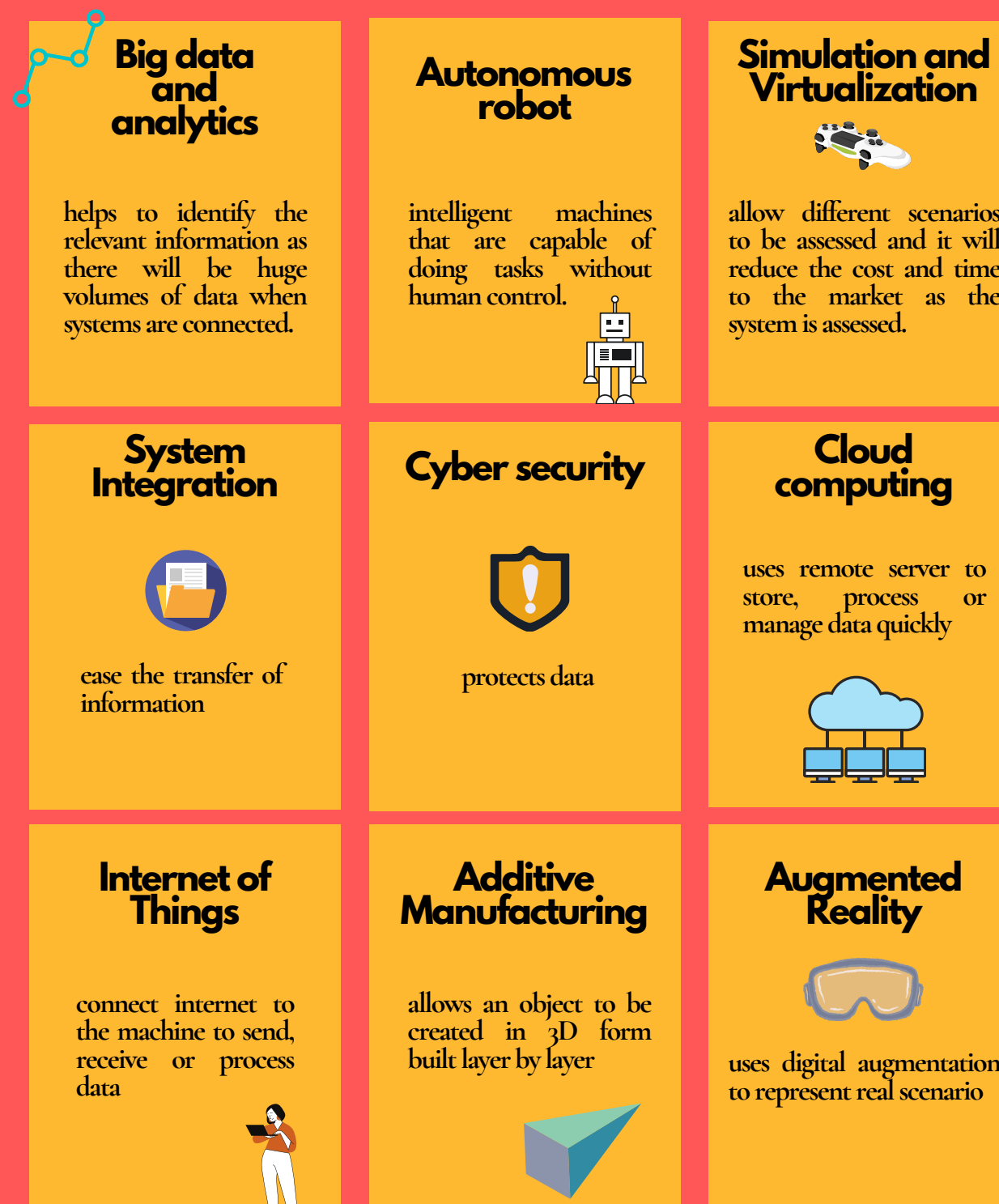
- Present (2020)
- Cyber-physical system
- The start of artificial intelligence



introduction

Industry Revolution 4.0 or also known as fourth industrial revolution is seen as a growth of transformative technologies that have changed the industry. Smart factories connected to the internet, smart homes, driverless cars, intelligent robots; these are things seen in the fourth industrial revolution. This revolution started in the first industrial revolution around 1780s where the muscle power changed into mechanical power, from human power changed into machine power, from the farm to the first factory using steam and water power. Then 100 years later, when the electricity arrived, it was known as a second industrial revolution which gave us the ability to conduct a mass production of goods, materials and machines and also gave us the first assembly line. When another 100 years arrived, this was called as the era of computing or digital revolution or the third industrial revolution. This was when the first programmable logic controller invented and the computers started being used for automation. Then there came the fourth industrial revolution, the one we are living in right now where not only the computer works by themselves, but they work with other intelligent robot and machine and they are connected to each other like the smart home where it is connected to the smart phone for as long as the owner is connected to the internet.

pillars of IR 4.0



trend

- autonomous car
- invisible analytics
- artificial intelligence
- virtual reality
- smart home
- 3d-printing

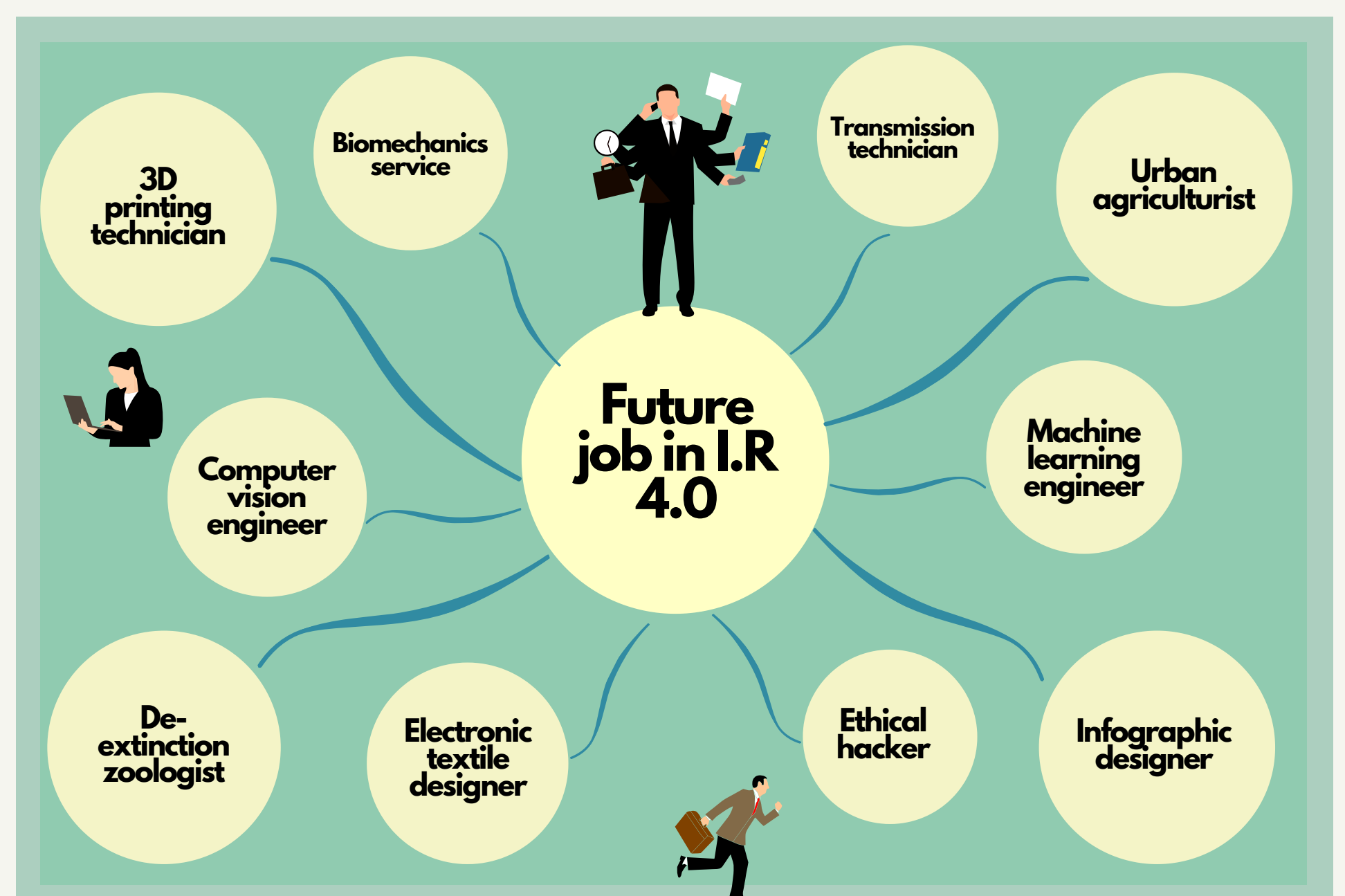


Course skills that human can offer that cannot be replaced by technology

- interpersonal skills
- creativity
- problem solving

A WAY FORWARD FOR INDUSTRY 4.0

- 01 Ongoing capability to provide workers with the tools they need to make choices that are fast and accurate.
- 02 Working together will improve our industrial ecosystem's durability and agility.
- 03 Reducing cybersecurity threats and hazards to your activities will strengthen the stability of operation and the long-term recovery prospects.



REFLECTION TOWARDS INDUSTRIAL 4.0

- 1 Industrial revolution clearly brings fortune to human as it eases our life. With innovation created by human, we somehow train our brain to think creatively in solving problem parallel to today's modernization. We also need to improve our interpersonal skills, creativity and problem-solving skills so we can contribute to the country's modernization by inventing technologies that can ease human life in the future, parallel to the fourth industrial revolution.
- 2 Student plays a major role in this new era of the world as they need to create new ways and develop skills that is able to adapt to the current technology and to go far beyond what we have now. The new generations need to be trained to solve all aspects of the challenges that the world offered now

REFERENCES

- 1 <https://www.facebook.com/UTMDigital/videos/197172358538587/>
- 2 Next Level: 9 Components of Industry 4.0. (2019, July 10). Retrieved December 12, 2020, from <https://news.heidelbergusa.com/2016/08/9componentsof4-0/>

E-commerce 4.0

We want to buy items that we're meant to do in a real store. Particularly for the older generations who are really familiar with the way, they go shopping, however. For the millennium, they are completely content with the age of e-commerce.

Consumers are most likely to use e-commerce platforms on a free basis. Customer demands will continue to change over time. Merchants respond by using artificial intelligence, or AI, so they know what the customer needs before the customer does. They will also respond by following orders immediately.

Education 4.0

To fulfill the specific demands of the IR 4.0 work market and to develop internationally competitive learners, education 4.0 needs to improve four skills, including critical reasoning, teamwork, cooperation and innovation, which could be nurtured and taught and perfected with the right methodology and direction. They may also be improved by the use of open cultural tools and education technology.