1. Natural language processing:

Natural Language Processing (NLP) is a key building block that will help computers learn, analyze, and understand human language. NLP can be use to organize and structure knowledge in order to answer queries, translate content from one language to another, recognize individual people by their speech, mine text, and perform sentiment analysis[1].

* For example, if you wrote an email to an online retailer complaining that the dress that was delivered was the wrong colour to the one you ordered, then the AI would be able to tell that this was a complaint, that the complaint concerned a dress, and the problem being it was the wrong colour. If the order information was not included in the original email then the AI could potentially work out which order it related to by triangulating the information it already has. Once it has gathered everything together, it can then route that query to the right person within the organisation, along with all of the supporting data[2]. So by using natural language processing, online retailer can improve the process capability of dealing with customers’ requirements including complaint.
* Banking providers have started to leverage NLP in different ways. On the website of the largest bank in the United States, virtual assistants offer support for credit cards, loans and other banking services. Singapore’s DBS Bank uses a virtual assistant called KAI to enhance the experience at Digibank, its mobile-only bank in India. KAI helps Digibank to anticipate and answer thousands of customer queries, and assist customers with their banking transactions in real time[1]. So, bank can improve their process speed and save human resources on many services such as answer queries from bank customers.

1. Visual recognition:

Visual recognition is a branch of AI that recognizes images and their content. It uses deep learning to perform its role of finding faces, tagging images, identifying the components of visuals, and picking out similar images from a large set.[1]

* For example: Several banks have adopted visual recognition in common front-end operations. Australia’s Westpac, for example, is using the technology to allow customers to activate a new card from their smartphone camera, while Santander is one of those using it to authenticate documents [1]. So, by using visual recognition, the bank can improve the speed of dealing with customer services
* Watson Visual Recognition: The IBM Watson Visual Recognition service uses deep learning algorithms to analyze images for scenes, objects, faces, and other content. Such as in Manufacturing: Use images from a manufacturing setting to make sure products are being positioned correctly on an assembly line[3], which help the organization to improve the process capability in manufacturing.

1. Navigating and movement

It covers the ways in which robots move through a given physical environment.

* Such as WAYMO[4], which is the google self-driving car project’s company, With the development of those self-driving cars, mobility for all people will dramatically improve, Self-driving cars will enable not only the elderly to be mobile, but it will also empower those with disabilities, the unlicensed, and those who do not own a car to travel as well,
* According to a report from KPMG[6], the platooning of vehicles could increase highway capacity by as much as 500%, meaning less traffic and less wasted time. [5].

1. Planning and exploring agents

It can help identify the best sequence of actions to achieve a goal[7].

* Such as Reinforcement learning[8], Applications of Reinforcement Learning in high-dimensional control problems, like robotics, have been the subject of research (in academia and industry), and startups are beginning to use it to build products for industrial robotics[9] . So, by using Reinforcement learning, industry can make the optimized decision in many fields, which help to improve the process of choosing.

1. Speech recognition

It involves the transformation of auditory signals into text. [7].

* In a relatively quiet environment, such applications as Siri and Alexa can identify most words in a general vocabulary [7]. Simple voice commands may be used to initiate phone calls, select radio stations or play music from a compatible smartphone, which helps to save the cost on time and energy for users[10].
* The problems of achieving high recognition accuracy under stress and noise pertain strongly to the helicopter environment as well as to the jet fighter environment can be solved by speech recognition technology[10], It helps to enhance the clarity of command made on helicopter or same environment, which is useful in military.

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