

Robotics in car industry

Technology, Artificial Intelligence



Abstract

Automotive industries revolutionized by robotics. Robotics changed the way how automation industries works. It prevents humans to work in hazardous situation. They work so effectly that Customer satisfaction get very high. From welding, painting , making parts , assembly and many more things done by robots. By providing safety, faster productions, 24 hours production robotics plays a vital role in improving car industries output. Now a days from raw materials to testing cars after production robotics almost doing everything. These types of contribution helps to reduce cost of making cars, watteage of times in productions and many more.

Introduction

Robotics has been develoved time to time. From the early stage they were big can do one or two specific tasks within a specific area. But as the technology advancing day by day robots are becoming more flexible, smaller, can do various types of works and many more. Lately there have been presence of intelligence in robots industries. They can fix small errors without the help of humans.

History of robotics

Robotics history can be divided into 2 parts. One is Early stage of robotics in car manufacturing, Mordern robots in car manufacturing.

Early sage of robotics (1954-1979)

George devol invented first robot which can be used in manufacturing industries. In 1954 he made a robot which can move objects from one place to another.

- In 1960 AMF corporation made a robot called Versatran.
- In 1962 Unimation made a robot named Unimate for General Motors.
- In 1973 Kuka made a robot named Famulus.
- In 1974 Vicram Inc. developed a robot named The Silver Arm.
- In 1979 Nachi robotics and OTC Japan developed some robots for car industries.

Mordern Robots (1980- Present day)

- From 1980- present is the time of mmordern robotics.
- In 1988 Motoman ERC control system made by Yaskawa America Inc.
- In 1992 First prototype intelligent robot made by Fanuc Robotics Corporation
- In 1998, 2003 many more robots are introduced in the market.

These days we use cars to go any play place. Cars play a vital role to save our time, makes our life comfortable. In the early stage car manufacturing industries use humans to produce theirs cars. Humans are not always perfect that's the reason why there are many fault in those cars often very costly. But by using robotics cars are manufactured today almost have zero faults, less costly and more safety. Robotics have been playing a vital role on a car which we use almost everyday. Thays why I think this topic is very important to discuss about.

Recently there have been many usage of robotics in automation industries. The usage of robotics are getting higher day by day. Maybe in the future robots can work without any help of humans. For car industries from raw materials to final product in almost every steps robotics have been used to

make car more fastly less faulty. I have been searching for the contribution of robotics in car industries. I have found 5 points about it. There are given in a very descriptive way below:

Robotic Vision

Recently Ford have been using robotic vision in their robots. Laser cameras installed in robotics arms so that robots can decide itself where to put the part. With the help of robotic vision and some complex programs robots can assembled the doors, windshields, fenders etc more accurately. Previously instulation of these parts can make a lot of noises but with the help of robotic vision it reduce it more dramatically. Also assemble time have been reduced.

Collaborative Robots

Collaborative robot means some robots do a specific task together. Great Wall Motors use these type of robots. In GWM factory handling robots and welding robots work together. The handling robots put the part in right position and the welding robots do the weilding . These robots do 4000 weilding and handling operations in just 86 mins. There are also many collaborative robots can do other things more fastly more efficiently.

Robotic Hand

Right now we don't have that much technology that can replace humans. Robotics do most of the heavy works. But they cant do every thing. Some times humans have to do a specipic task. For this reason robotic hand comes in handy. Humans cant pull heavy weight but with the help of this hand humans can pull up to 10 pounds with a little force. These robotic hands can

grip parts so tightly that chance of accident will be very low. The name of the robotics hand is X-Ar arm. These types of robotics hands have many sensors which will help to do the operation perfectly.

Robots in painting

Painting a car is not a easy thing to do and It is very harmful for health.

Robots do these types of works without any help of humans. But if humans do the part of painting many waste will generate . This will not only will harm the human health but also the environment too. For this robotics are doing the painting job more accurately more fastly more efficiently more idependently.

There are also other types of robots such as machine tending, material remover, part timer etc.

Advantages

1. Robots can do some works which perfomed by humans before. So robotics reducing jobs, it can save lots of money . Increasing robotics will help any car industries to financial increase. These finance can be use both purcheseing or developing more robots.
2. Robot can assure quality. Humans can do work wrongly but its very rare to find that robots are doing their work wrongly. With the help of robotics mass production can be assured. It can make cars less costly.
3. By using robotics in car industries can ensure maximum production. Because there will be no injuries or sickness. Company can estimate their future production also can reduce their production depending on the situation.

4. Robots can also help to reduce human health risk by doing riskier jobs in hazardous environment instead of humans. Robotics in car manufacturing industries can also reduce accidents by doing works in critical conditions. So that managers can ensure employees safety.

Disadvantages

1. As robots are taking over humans job so there were huge unemployment. People cant find jobs according to their skills. Among young people there is a huge frustration that they cant find jobs immediately after their graduation. Companies also firing their employes to reduce cost. Homeless people are increasing.
2. Lets think how it will impact on social, notional or internationally. If the unemployment rate is high GDP will fall, purchase power will be less, tax will be less, development of a country will be slow down. Companies will be require less employess, there will be hard competition on getting jobs and many more bad impact will happen eventually.
3. Initial cost of instalment of robots will be high also repairing these robots need a high amount of money. If the companies fall into loss, they are often get bankrupt.

Conclusion

Robotics in car industry is both blissful and curse for our world. In one way it is increasing efficiency, another way it is creating unemployment.