

Recent Robot In Industrial Automation

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ABSTRACT

One Robot is Robotics and Ten robots is Automation.’ Automation is most of important part in any industry. Automation help to get better result, high accuracy, performance within period of time as customer demand is increases for achieve the requirement of customer they have to be updated this only possible by automation. Robot is a machine capable of carrying out a complex series of action automatically especially one programmable by a computer. Robots can be guided by an external control device or control may be embedded within. Efficiency and productivity are decisive success factors for manufacturing industries. Engineering plays an important role in this special as it relates to ever more complex machinery and plants. For that reason, a high level of efficiency is already demanded at the engineering stage, as the first step toward better production: faster, more flexible, and more intelligent. All of this is called Totally Integrated Automation.

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I. INTRODUCTION

Robotics or the artificial intelligence is used in manufacturing, in the research, the rescue operations, and in the military. They are used in the factories across the world and the people have been increasingly losing their jobs as the robots become more efficient and precise than humans. The ISO definition was completed by “Bill” Griffith P. Taylor in 1937 and published in Mecca no Magazine, March 1938. An industrial robot is a robot system used for manufacturing. Industrial Robots are most of programmable and capable of movement on two or more axes. After a long floristic period of industrial production, there has been a trend in some parts of today’s industry toward individualized products. Additionally, robot-based industrial automation increasingly diffuses into small and medium sized enterprises (SMEs). In both cases, the industry has to adapt their production processes for small lot sizes and a high number of product variants. Hence, they require their robot systems to allow for rapid changeovers and efficient teaching. In this context, commercial viability of automated production is highly influenced by the time required to teach new processes and to adapt existing processes to variations of a product. An important role plays industrial robots in foundry for lifting crucible and pouring the molten metal into mould. Industrial robots replaced humans in

monotonous, repetitive, heavy and dangerous tasks. When the robots could manage both a more complex motion, but also had external sensor capacity, more complex applications.

Followed, like welding, grinding, and assembly. The usage of industrial robots can nowadays, roughly speaking, be divided into three different groups; material handling, process operations and assembly. Robots are using at heavy duty work and high precision area. In industry mostly articulated robots, SCARA robots, delta robots and Cartesian co-ordinates robots. The most popular is ROBOTIC ARM for production industries. Some robots are design for specific action in other word mass production.

II. LITERATURE REVIEW

1. Masood Dehghani Soufia [1] et al studied Performance and Exhaust Emissions of a SI Two-stroke Engine with Bio lubricants measured by manually and Using Artificial Neural Network. Result obtain by both method considered acceptable limit. The ANN approach can be used to accurately predict the problems of internal combustion engines.

2. Qingqing Yang[2] et al studied Artificial Neural Network Based Fault Detection and Fault Location in the DC Micro grid. The DC micro grid including wind turbine, battery energy storage system, loads and AC grid is simulated in PSCAD/EMTDC. ANN is best method for fault detection and fault location in dc micro ride

3. Mohd Herwan Sulaiman[3] et al studied a new developed algorithm, DS has been proposed to solve OCL problem. The effectiveness of DS was demonstrated and tested on 6-unit chillers system. From the simulations that had been presented, it can be said that DS is able to give the best results of total power consumption minimization compared to other recent algorithms. It can be concluded that DS is a strongly recommended algorithm for solving OCL problem.

4. Alla A. Kornienko[4] et al studied the development of expert systems as an important application field of AI, the authors warn against too much optimism in assessing the potential of expert systems technology, due to the limited knowledge available to the expert system, the difficulties in transfer of "deep knowledge" and a lack of flexibility, as well as due to inability to provide meaningful explanations.

5. Cüneyt Dirican[5] studied The Impacts of Robotics, Artificial Intelligence on Business and Economics. The author also show the advantages of mechatronics, robotics, cloud computing, artificial intelligence, neural networks etc. and how our life shifting phase. The author also give information about some big issues like unemployment rate, the Philips Curve, Purchasing Power Parity, GDP, inflation, money, management and accounting.

6. Guo-Qing Sun[6] et al studied the kinematic modeling method of the industrial robot. DH method was chosen to establish the kinematic model of a 6-DOF robot.

7. Asif S[7] et al studied the contactless control of robot. This kind of case-study can be used in HMLV industry in which there is still need of manual intervention from operators where robot can act as assistant to the operator.

8. Lama F. Alfallaj[8] et al studied we collected data from different resources to find a number of research fields in robotics. Its also give brief information about application of robot in different field i.e Medical/healthcare, industrial, educational, social/ personal/ home/ workplace, aerospace, service, architectural, agricultural, marine.

9. Mostafa Sharifi[9] et al their study based on mechatronic design and development procedure of an omnidirectional mobile robot – MARIO. Focused on developing an optimal path trajectory system, vision based localization and navigation system for reliable operation in agricultural environment.

10. Paulo Leitão[10] et al their study based on an overview of key aspects related to Industrial CPS and key approaches and technologies associated with their engineering and implementation related to industrial automation, such as MAS, SOA and cloud systems.

Four reasons why should explore ROBOTICS:

1. Robots used in manufacturing create efficiencies all the way from raw material handling to finish product packing. [2]

2. Robots can be programmed to operate 24/7 in lights-out situations for continuous productivity. [4]

3. Robotic equipment is highly flexible and can be customised to perform even complex function. [3]

4. With robotics in greater use today than ever, manufactures increasingly need to embrace automation to stay competitive.

III. CONCLUSION

Automation can be highly cost-effective for nearly every size of company, including small shops. The widespread use of robots in standard, large-scale production such as the automotive industry, where robots perform repetitive tasks in very well-known environments, for some time resulted in the common opinion that industrial robotics is a solved problem. However, these applications comprise only a minor part of the industrial work needed in any wealthy society, especially considering the number of companies and the variety of applications. The use of robots in small and medium-sized manufacturing is still tiny. Global prosperity and wealth requires resource efficient and human assistive robots. The challenges today are to recognize and overcome the barriers that are currently preventing robots from being more widely used.

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