ARTIFICIAL INTELLIGENCE GAINING MOMENTUM IN INDUSTRY-AN OPINION

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ABSRACT

Industry 4.0 is contextually referred to as modern manufacturing revolution (equivalent of first industrial revolution) which is characterized by use of cyber-physical systems and technologies. The industry 4.0 is characterized by extensive use of internet technologies, cloud computing, IoT, Intelligent Machines, Smart Automation and Big Data. The symbiosis with manufacturing industry has deepened through onslaught of Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) in recent times. These technologies are proving extensive platform in the manufacturing domain and brining the new benchmark practices. These technologies and domains have since evolved exponentially, as the connected world finds these as hygiene features in day-to-day internet and cloud-based services.

Keywords: Artificial Intelligence, Machine Learning, Industry 4.0, Industry 5.0, Cobots.

INTRODUCTION

In our opinion, the industry is headed towards is the "smart factories", with millions of dollars being invested in the entire value chain. This is not limited to IoT or Robotics alone but goes beyond into emerging disruptive technologies viz. Artificial Intelligence, Machine Learning and Deep Learning. Machine learning algorithms and big data has been the bedrock of such learning. The term Industry 5.0 refers to people working alongside robots and smart machines. It's about robots helping humans work better and faster by leveraging advanced technologies like the Internet of Things (IoT) and big data. It adds a personal human touch to the Industry 4.0 pillars of automation and efficiency. In manufacturing environments, robots have historically performed dangerous, monotonous or physically demanding work, such as welding and painting in car factories and loading and unloading heavy materials in warehouses. As machines in the workplace get smarter and more connected, Industry 5.0 is aimed at merging those cognitive computing capabilities with human intelligence and resourcefulness in collaborative operations. The pairing of human and machine workers opens the door to countless opportunities in manufacturing. And since the use cases of Industry 5.0 are still in their relative infancy, manufacturers should be actively strategizing ways to integrate human and machine workers in order to maximize the unique benefits that can be reaped as the movement continues to evolve.

We interacted with lot of people across industry segments, it clearly evolves that industry has realized that the digitization efforts of past decade or so have created a huge wealth of data of their internal manufacturing processes, quality control techniques, supply chain management, production planning and scheduling, equipment reliability and efficiency, etc. It's a big bonus, this big data is now finding its way into creating smart and intelligent systems in the manufacturing. Also, there are processes, which are risky for human intervention.

These are now becoming focus areas of artificially intelligent manufacturing systems and AI based controls, which allow the processes to be performed without human intervention or monitoring. However, AI and Machine Learning has just managed to scratch the surface of manufacturing, the scope of infestation is immense. As the industry moves towards smarter manufacturing, the future will see domination of cobots – humans and artificially intelligent robots co-exiting in the manufacturing ecosystems.

AI based algorithms make this whole analysis, interpretation and error-proofing efficient and automated, which would have been tedious and cumbersome for humans. However, it must be very clearly seen that AI is not replacement for the humans. It is rather an enabler, which allows human brain to focus on error proofing and not on the data generation, sorting and storing. AI is also going to significantly enable efficient utilization of every dollar invested in capital expenditure. The future is going to be very exciting and innovative for this front-runner industry. The journey has just begun.