Human-Machine Collaboration and Interaction in Industry5.0

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Abstract

This article reveals the real scenario of economic progress. Using real-time data from the Industry like Gartner in the coming decade the possibility of growth in AI and ML in the Indian Industry. The biggest concern in topics like human-machine collaboration and interaction in the industry is to acknowledge the psychological traits of the physical human beings towards the choice of interpretation on AI and ML regarding the preference of the industry.

Purpose of the study:

The study reveals the thinking of the human brain towards conceptual traits in a particular industry in terms of the techno-behavioural traits in AI and ML. This study shows that society depends more on emotion rather to look towards artificial creating emotion through AI and ML.

Action in this study:

1. Do the human psychological traits for certain industries reveal the same as that of artificial human traits?
2. Do the phenomena of emotional traits by human beings determine the same level as that of AI and ML?
3. Is the industry satisfied with the same level of human ignorance towards a particular product rather than the same ignorance for the product by AI and ML?

Keywords: Conceptual traits; Techno-Behavioral traits; Emotional traits; Industry satisfaction.

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INTRODUCTION:

The subject of the presentation on the Human – Machine collaboration in Industry 5.0 ranges a wide topic for discussion, but in the current scenario, Artificial intelligence and Machine learning seem to be a topic of discussion for the Academic industry to big industries. Though society has many problems to solve; in these circumstances, not all the problems are solved by Artificial intelligence and Machine learning alone or we cannot treat the AI and ML seems to act as an independent actor for society, so in this scenario, the combination of the human-machine collaboration seems to be the best fit for the Industry 5.0, but from the microscopic point of visualization this human-machine collaboration faces the most critical testing to get succeed into the Industry 5.0. To prove the above statement, we put the important case study on AI and ML along with the human system as given below:

Case Study 1: Does the human Psychological Trait for a certain Industry reveal the same as that of the artificial human traits? (Conceptual traits; Techno-Behavioral traits)

The theory of planned behaviour is known as the perceived behavioural presence and absence of resources (Ajen, 2002) including the skills and material items that facilitate and promote the behaviour for facilitating each resource; the theory of planned behaviour is now most extremely used in the social psychological model. As noted, "Any dispassionate reading of the evidence leads to the inescapable conclusion that the genetic factor plays a substantial role in the origin of individual genetic factor play a substantial role in the origin of individual differences to psychological traits both normal and abnormal" (Rutter, 2002).

Analysis of the Case Study 1:

The study of the above analysis reveals on the fact of the conceptual and techno-behavioral traits of human beings; Before studying the deep delve into the analysis we need to understand the technicality and the function of the brain of the human brain in various circumstances. The human brain is based on two parts (1) Grey matter (2) White matter. In the brain the grey matter describes the outer section of the neurons; while the white matter determines the inner section of the neurons. Each section has its function, but in the same circumstances the function is based on the signals and this signal transforms into the messages. In the anatomy of the human brain function of the cerebrum; brainstem; and cerebellum function the whole scenario of the human body. The matter of the conceptual traits is fixed on the assumption that the signal present from the neurons is naturally biased on the technical function of the human heart; rhythm; breathing; and blood flow of human beings. In the same scenario if we look forward to the artificial traits the theory fixes on the programming module of the human brain in the form of artificial intelligence through the process of generative AI, Though the process is based on a technicality on the same side there seems a question for the policy maker if in certain scenario the programming factor starts malfunctioning then the scenario of the abnormality results from the curse for the human beings. Resultantly the effect of the conceptual trait and the techno-behavioural traits remains a question for the subject like the AI and ML. In

AI and ML, the possibility of the happening occurring with the scenario of the conceptual trait and techno-behavioural trait are as follows.

1.1. Programming factor makes the artificial human beings to think like a human beings but the emotion attachment in connection with the work related activities remains a concerning factor in the study process of the paper.
1.2. If the scenario happens advance programming put up in creating the emotional factor like the human beings; then the factor on the basis of the (artificial conceptual traits; and the techno-behavioral traits still possess a question for query in-front of the natural brain functioning factor of the human beings.

Case study 2: Reading the phenomena of the human traits determine the same level as that of AI and ML (Emotional traits)

The description of the conceptualization of the emotional traits (emotional intelligence) is going under the head of severe testing from the theoretical phenomena to nature intelligence (Neisser et al.,1996) how many intelligences exist, the fiercest of 'g' theorists, proposing the intelligence is best described in the form of single, general mental ability, allow for the existence of more specific factor (Caroll,1993). Intelligence can be divided in the form of the crystallized (memory dependent) or fluid (process dependent) abilities. Further this approach divides the intelligence into information areas for example verbal-propositional intelligence that deals with the word and logic and a spatial intelligence that deal with the arranging and rotating objects in space, on the other side emotional intelligence going to address (1) capacity to reason with and about emotion (2) contribution of the emotion system with intelligence.

Analysis of the case study 2:

The study of the above analysis reflects on the natural phenomena of the signal of the human body in the form of the transmission of the accepting and receiving of the signal. If we foster the analysis of the human traits (emotional intelligence) from the visualization of the artificial intelligence and the machine learning seems different in the certain prospects, because the programming used in rectifying the activity of the emotional trait as of the human being activity seems not so much counterproductive for the economic progress of the industries. In this scenario the conflicts of the dynamism versus static prevails for the scientist, policymaker to rethinks on the issuance factor. The emphasizing problem is overwhelming for the above analysis is given below:

2.1. Human Emotional traits(intelligence)consist of the natural phenomena; whereas the AI AND ML seems a technology related to the programming and the syntax to create Human activity.

2.2. Accepting and receiving of the signal in the human nervous system open the questions to the AI and ML that if the transformation of the emotional traits able to create in the artificial

human being, then in this scenario how one can create repository transformation of the emotional intelligence (traits) with the changing of time. In this scenario human nervous system work on the dynamic model rather to look on the constant factor of AI and ML in emotional traits(intelligence).

2.3. Variability factor in response with the changes of the time in human nervous system relates somehow lacuna with the emotional traits(intelligence) on AI and ML on single human beings.

2.4. The timing of the response in the human beings with the emotional traits (intelligence) not easily comparable with the program based robotic human beings on AI and ML.

Case study 3: Is the industry satisfied the same level of human ignorance towards the particular product rather to look the same things on the product by the AI AND ML (Industry satisfaction).

The study elaborates on the diverse application of the IOT, showing its ability to personalize customer experiences, optimize product offerings, streamline service delivery. Further computing model emerges as crucial aspects of research, underscoring the importance of processing and analyzing the vast data sets to derive the actionable insight, the research deep delves into the customer centric strategies to enhance customer satisfaction (Sagar.et.al.2013; Safa.et.al.2013; Hung.et.al.2021).

Analysis of the case study 3:

3.1. The usages of the diverse application of Internet of things help to determine the personal customer experiences, optimize product offerings, streamline service delivery; further in this phase computing model emerges as a crucial aspect of research, underscoring the importance of processing and analyzing the vast data set to derive the actionable insight for the customer satisfaction. The actionable approach in this case study raises a question on the utility and the satisfaction of the human wants. The primary effect of the customer satisfaction for the specific products/ company exhibits on the price of the products; the nature of the brandings; nature of the execution of the products in form of the testing, produces a limitation to the theory of the AI and ML. The second specific reason of the analysis Industry always continuously changing the strategy due to the competition of the rival market leaders; in this scenario the question remains for the AI and ML in the era of the fast-changing scenario how to retain customer retention on the volatility factor of the human beings with the surging market competition. The present activities of industry in the developing nation need to work on the issuance factor of the real human problem in the society with the price of the products versus standardization. The scenario of the AI and ML embraces the least industry satisfaction when looking deep delve into the societal problems.

2.0. METHODOLOGY:

The study embraces the factor of the human and the machine collaboration 5.0 through the above mentioned case study states that the correlation between the human and machine in the technology transformation for the industry need sort out the visualization from the mirror of the overall economic development ; as the theory of the research paper collected from the Scopus indexed journals; web of index; Google scholar data base shows the wide gap in actual phenomena of the AI and ML in the subject concerning factor of human and machine collaboration 5.0.

3.0 RESULT AND DISCUSSION: The important factor of the discussion in this paper to rectify as a solution to solve the problem of the society for the researcher and the policy maker to think on the crucial factor on the balancing act of the human system and the technology. To elaborate the above system for the collaboration of the human –Machine collaboration for industry 5.0 is as follows:

1.***Human Psychological Phenomena***:

The model of the AI and ML need to form up on the human centric factor, the activities, sentiments of the human beings on the various situation. The normal phenomena of the human traits under the complex situation seems to be the questionable in finding the solution of the activity in compare to the easy and the refined factor. Easiness on the work performance of the human model not been the factor for the AI and ML in Industry 5.0

2.***Human eccentric Model***:

The model should be developed on the natural phenomena of the human beings. Although we know AI and ML Seems a carbon copy of the human beings as per as the needs of the industry. The ongoing study of the AI and ML seems a broad outlook in the future research if really transform the industry 4.0 to 5.0.

3.***Emphasis more on Inner traits of the human beings on the basis of sociological needs:***

AI and ML need to trained on the platform of the human being's response on the sociological needs, because the transformation of the economy totally relies on the outcome of the human being's response on the products manufactured by the industries. The points need to clarify most how the AI and ML would able to track the response on the mind's volatility of the human beings.

EMPIRICAL FINDINGS OF THE PAPER:

The finding of the paper needs to get focused on the above-mentioned topic of the Human psychological phenomena; Human eccentric model; and the inner traits of the human beings on the basis of the individual biasness rather to look on the sociological needs with the help of the diagram to determine the topic need to be resentful and seems to be the major discussion for the policymaker to think on the issuance factor of above discussion.

Sl.No	Human Psychological Phenomena	Human Eccentric Model	Emphasis more on inner traits
1.	Biological Psychology; Development Psychology; Evolutionary Psychology; Cognitive psychology; Humanistic Psychology.	Deception model of the Eccentric model based on the (1) Genius (2) Intellectual Giftedness (3) Creativity	Creative; Patient; Flexible; Humble; Loyal; Persistent; Disciplined
2.	**Creation of the model on AI and ML On Psychological Phenomena**	**Creation of the model on AI and ML On Eccentric Model**	**Emphasis more on creation on Inner traits**
	Develop the model of the evolutionary trends of the emotion on the basis of the variability factor through the mode of the trend analysis ratio factor	Develop the model of eccentricity for the AI and ML On the basis of the Deep neural network. Deep neural network based on the basis of the predictive probability distribution and matrix Factorization.	Develop the model on the assumption of the multi- model optimization theory to determine the Actual co-ordination of the Human- Machine collaboration.
3.	**Results**	**Results**	**Results**
	Complex implementation of Mathematics and statistics	Complex implementation of Mathematics and Statistics	Complex implementation of Mathematics and statistics
	High level of testing.	High level of testing.	High level of testing.

Source: by the Author

CONCLUSION:

The chapter reflects on the major issuance factor of the AI and ML with the natural process activity of the human beings. In order to transform and work jointly to get success into the industry 4.0 to 5.0 the policy maker, sociologist, psychologist need to work at the primary level microscopically about the real human performance in collating data to further process for the AI and ML Engineer and scientist to build model and program, to run the artificial human beings in a real process.

Scope of the study:

This is the paper based on the practical scenario in the AI and ML Lab. This is based on the daily happening of problems faced in the industries due to the new advent of AI and ML.

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