Contribution of Artificial Intelligence (AI) in Personal Discretion (PD) in 21st century

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Abstract: **This study has conducted in order to understand the relationship between artificial intelligence in terms of artificial neural network (ANN), fuzzy logic (FL), evolutionary computing (EC) and decision making through personal discretion (PD). The PD is defined as an invisible authority of an individual to choose one alternative over another while making any final decision. The researcher has included the scholarly work done on the subjects related to artificial intelligence and decision making through the use of technology. Although, the study used deductive approach and quantitative design in order to carry this study. Hence, a close ended questionnaire was developed and non-probabilistic judgmental sampling has been employed in order to collect data from 128 participants depending on their academic and professional background. Subsequently, the data was analyzed through SPSS and it was found that, there is a significant moderate relationship between artificial neural network (ANN), fuzzy logic (FL), evolutionary computing (EC) and decision making in terms of personal discretion (PD). In addition to that, it was extracted through Spearman, Pearson and Regression analysis that, there is a strong relationship between AI and personal discretion (PD). Hence, it is implied that, the decision making in terms of personal discretion can be improved or replaced through the use of AI in the future.**

Keywords: **Artificial Neural Network (ANN), Fuzzy logic (FL), Evolutionary computing (EC), Quantitative, Decision making**

INTRODUCTION

The widespread rise of computer technology and its use in the daily lives of humans, has opened a window of opportunity and great hope that, one day technology will be able to make human-like decisions. Hence, the recent emergence of artificial intelligence (AI) has been proclaimed as a turning point in human history. Artificial intelligence has been referred as science of knowledge representation and science of reasoning as, the computer programs are designed in a way that, they mimic human decision making and follow the similar sort of procedures and processes adopted by the human mind while, making any kind of trivial or important decision(Pomerol, 1997). Human decision making has always been remained a great area of debate and consideration because, it is when the history is either made or destroyed. Human decision making is considered as a process when the humans make a best choice and hence a decision, after evaluating the multiple choices, provided they know all the available choices at hand (Beresford & Sloper, 2008).Hence, an individual decision making involves personal discretion as, it is the discretion of an individual to accept the best possible option for a particular phenomenon or to deny that option and choose the alternative one. Personal discretion (PD) is considered as an idiosyncratic characteristic of an individual in order to either choose from multiple alternatives available or solve a particular problem by using one's own heuristics. However, the technology has been helping humans from at least last three decades in a way or another to make best possible decisions but, the technology is mostly used as an aid to human decision making while, personal discretion remained solely a matter of an individual. However, the emergence of AI has challenged the old paradigm of technology being used as an aid to human decision making as, it has provided the mechanism through which, human decision making can be replaced completely with the machine decision making. Moreover, there are different paradigms used in computational intelligence in order to reproduce similar sort of processes and procedures used by the human mind while, making any kind of decision (Jain et al., 2008). One of them can be neural networks (NN), it can be employed to aid in the decision making through mostly decision support system (DSS). Neural networks (NN) can use power classification in developing multiple quantitative models in order to imitate the human decision making through optimization, simulation, decision analysis and black box approach. In addition to that, neural network (NN) performs the non-linear computation, that makes it very simple and sophisticated at the same time as, the system can analyze huge input data into a valuable output in a quick short timeframe through the help of distributed processing elements (PEs)(Delen&Sharda, 2008). Another way to mimic the human decision making is to reduce the level of uncertainty embedded in almost every kind of decision through informed cause-effect relationship.

It is also emphasized by Chaudhuri et al. (2013) that, the conventional mathematical models are not appropriate to introduce uncertainty and vagueness in data, hence fuzzy sets or fuzzy logic has been used to accommodate the impreciseness in the data in order to make the data appropriate for the decision making. The collection of huge amount of data presents a unique problem of data optimization and eventually optimal solution. Hence, there must be some algorithm that takes huge amount of data, optimize it and provides best optimal solution at the end. Evolutionary computing (EC) is used to tackle with the huge data optimization problem and to get optimal solution of a problem being faced or issue at hand (Mohammadi et al., 2020). Human decision making and personal discretion in particular need precise data of multiple possible alternatives and then analyzing that data in order to make a final choice or decision. This can be done through fuzzy logic being used first in order to get precise data, Evolutionary computing being used at the second place in order to get data optimized and then complement the both with neural networks in order to connect the dots. Thus, fuzzy logic, evolutionary computing (EC) and neural networks

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(NN) can be used to simulate human decision making hence, personal discretion. Therefore, this research has chosen these three soft computing paradigms in order to understand their contribution in making AI based applications, those can be eventually used to imitate personal discretion in the future.

Hypothesis:

H1= There is a significant relationship between fuzzy logic(FL) in terms of artificial intelligence and decision making in terms of personal discretion

H2=There is a significant relationship between evolutionary computing (EC) in terms of artificial intelligence and decision making in terms of personal discretion

H3= There is a significant relationship between artificial neural networks(ANN) in terms of artificial intelligence and decision making in terms of personal discretion

H4=There is a significant relationship between artificial intelligence (AI) as a whole and decision making in terms of personal discretion.

Problem Statement:

Phillips-Wren (2012) argued that, human decision making is already supported by the artificial intelligence tools (AI) in many areas such as banking, finance, healthcare, strategic decision making and cybersecurity. However, Simon (1997) mentioned that, there are four steps commonly used by humans in decision making including intelligence gathering, designing, making choices and implementation. Hence, AI mainly supporting the human decision making in first two steps of a decision making process promulgated by Simon (1997). Kolbjørnsrud et al. (2016) further added that, artificial intelligence (AI) has helped the individuals to replace some of the cognitive features used in the decision making including self-learning, reasoning and adapting. However, AI has supported the human decision making rather than completely replacing it with AI system. But, this research has conducted in order to understand how AI-based applications can be developed in order to almost replace the decision making in terms of personal discretion (PD) through the use of fuzzy logic (FL), evolutionary computing (EC) and artificial neural networks (ANN).

LITERATURE REVIEW

Although, the concept of artificial intelligence (AI) has remained in this world from last century, it was not as prominent as in 21st century. The reemergence of AI in the 21st century is actually because of access to large amount of data on human actions as, it is estimated that 75 billion devices would be connected to internet until 2025. Hence, big data revolution leads towards AI revolution (Leyer et al., 2020). Today, AI has gained greater and deeper influence in almost all areas of human life including social, economic, political and legal as well. However, AI has used in most of the cases to augment human decision making, it is still not being used as a substitute to human decision making. Rabova et al.(2005) argued that, human decision making actually involves at least three steps including defining the problem, finding multiple solutions to that problem and then evaluating and choosing the best among those solutions. They added that, AI can be used to solve problems by using logical programming, neural networks, fuzzy expert system and etc. Russell and Norvig (2010) mentioned that, AI system of decision making can be built on decision making theory along with probability and utility theory in order to create a decision making process, that can be used to make final decision of any posed problem. Moreover, Ariely (2011) added that, human decision making involves multiple factors including some unforeseen matters like personal bias hence, a good AI system must incorporate such factors. However, Dietvorst et al. (2014) argued that, a better AI system should outperform human decision making as, individuals are less prone to their own errors than the minor errors made by the machine. It was further added that, human decision making is actually dynamic in nature and human often reassess their old decisions based on the satisfactory outcome being received from executing particular decisions. Hence, any AI based system for decision making should involve the dynamic nature of decision making process (Leyer et al., 2020). Ferreira &Monteiro (2021) mentioned that, although AI is supporting human decision making but, the final decision in most of the cases still lies to humans hence, those using AI as a support system must be aware of how AI works in order to justify their final decision. They further added that, it is most difficult part of the decision making process, when AI is used as a decision partner by humans and humans need to justify their decision to others, they often fail to justify because, it is not possible to comprehend completely how AI works in its domain. Although, there have also been examples where bureaucratic decisions are partially replaced by AI based systems in which, AI basically decides regarding what course of action is needed to be taken while analyzing the issue or problem at hand(Vredenburgh, 2023). Mitrou et al. (2021) added that, human discretion is an important factor in government agencies while implementing the rules or policies hence, while using AI in government agencies, human control of the whole system is still being considered the important aspect. As human discretion is an inexplicable mental function in humans, this study has been conducted in order to understand how AI can either support or replace the personal discretion in the future.

Relationship between Artificial Neural Networks (ANN) and Personal Discretion:

Artificial neural networks (ANN) is most of the time referred as neural networks (NN) is actually represented to simulate the functioning of biological neurons. There are three kinds of knowledge that is processed by brain including structured, semi-structured and unstructured knowledge. ANN contributes significantly in processing semi structured knowledge, a kind of knowledge where the relationship between input and output is not known. Malakooti & Zhou (1994) added that, ANN is formed through interconnected nodes and different models are used to connect those nodes and describe the functioning of nodes. Moreover, there is no need to develop an explicit algorithm for the functioning of ANN as, the system learns itself from the samples of historical data (Parvar et al., 2000). In most of the times, the human decision making requires to connect the dots and make the whole picture in order to make a better decision, ANN learns from the data and depict the whole picture

to the decision maker at the end. Hence, Lin et al. (2022) argued that, ANN can be used to perform complex psychological tasks as, ANN can perform efficiently and effectively in those psychological scenarios where human judgment is mostly required. Malakooti & Zhou (1994) further added that, ANN is effectively used to solve problems that has multiple alternatives and those have conflicting objectives. Hence, ANN uses the approach of multiple criteria decision making (MCDM). On the other hand, Yang & Xu (2016) mentioned that, ANN is mostly used to solve non-linear problems because, non-linear problems usually requires human judgment to find the solution of a problem. However, Vaidya & Kumar (2006) argued that, ANN also uses Analytical Hierarchy Process (AHP) in multiple criteria decision making in order to select the best alternative by converting the options into a numerical form. Carpenter & Grossberg (2010) added that, adaptive resonance theory (ARD) is also used while establishing the ANN in order to match external option with the internal choice in order to either accommodate the new change or to discard the new change and choose only those options, that matches with the internal expectations. Although, Delen &Sharda (2008) argued that, ANN actually supports two kinds of decision support system (DSS) model driven DSS and data-driven DSS. They further added that, both DSS are used for different purposes but, adaptive nonlinear processing elements (PEs) actually play a major role in developing both DSS. However, the personal discretion is mostly related with the data-driven DSS hence, ANN based on data-driven DSS can be used to support the human judgment.

Relationship between Fuzzy Logic (FL) and Personal Discretion:

Every human decision involves some level of uncertainty regarding the outcome of the choice being made, hence fuzzy logic or system has been used in the artificial intelligence in order to mitigate the vagueness and uncertainty involving the relationship between input and output. Fuzzy logic also address the internal biases and selectivity involving the human decision making (Chaudhuri et al., 2013). Srivastava et al., (2013) added that, fuzzy logic is used when the input data is not sufficient to transform it into output hence, the fuzzy logic fills that gap. It is used when the human decision maker requires human judgment regarding relating the two different sets of data that needs to be connected in one way or another. Moreover, fuzzy logic is basically based on probability theory hence, it converts the uncertainty into mathematical modeling. It has been also found that, fuzzy logic basically involves two kinds of functions discrete and continuous (Coroiu, 2015). Although, Blanco-Mesa et al., (2017) argued that, human decision making involves objectivity and subjectivity and it is actually quite difficult to make a system that addresses the human subjectivity but, fuzzy logic makes it possible through probability mechanism. Moreover, fuzzy logic is actually based on classical Boolean sets and then it creates multi-valued logic that become the basis to apply the fuzzy sets into human decision making. It is also added that, sometimes human decision making solely depends on human judgment and discretion, hence fuzzy logic tries to simulate the human thinking and judgment under uncertainty. Beheshti & Lollar (2008) mentioned that, fuzzy logic plays a key role in development of a system that can mimic human decision making because, it provides the conceptual framework regarding the context in which decision is made. They further added that, fuzzy logic is actually built upon a mathematical system that hints on the decision making uncertainty through the probability range of 0 to 1. Ball (2023) further elaborates that, fuzzy logic system can interact seamlessly with other systems, hence it facilitates the machine-based decision making in uncertain and complex situations where human judgment is mostly required.

Relationship between Evolutionary Computing (EC) and Personal Discretion:

There are many algorithms used by AI in the process of decision making and evolutionary computing is one of them. It is basically based upon Darwinian philosophy of evolution and Bayesian network model where a group of solutions or individuals are matched with posed problem and closely matched outcome is submitted. Moreover, new solutions or individuals are also developed by the same algorithm in order to either resolve a new issue or update the database by itself (Cui & Wong, 2001). Mohammadi et al., (2019) added that, EC actually performs fitness function through which, closely matched option is chosen. Normally, there are three algorithms used in AI as supervised algorithm, semi-supervised algorithm and unsupervised algorithm and EC deals mostly with either semi-supervised algorithm or unsupervised algorithm. In addition to that, it is also observed that most of the personal decisions are either made in stationary situation or non-stationary situation. Evolutionary algorithm is suited for the decision problems in non-stationary situation as the dynamics are not fixed in such situation (Barreto et al., 2009). However, Purshouse et al., (2014) mentioned that, EC involves mainly three decision making approaches including priori decision making, interactive decision making and posteriori decision making. Evolutionary algorithm while taking into account priori approach, includes decision maker preferences in advance of the optimization, while in the interactive approach, preferences are included during the optimization process, however, in the posteriori approach, preferences are taken into account after the optimization. Yu & Gen (2010) argued that, EC has mainly three components including EC based upon population, fitness or variation. They further added that, EC mostly solve two kinds of problems, optimization and learning problems. Generally, optimization technique is firstly applied and if the problem is considered to be too complex then EC applies learning algorithm in order to do fitness approximation.

RESEARCH METHODOLOGY

Basically, there are three major research paradigms those are used in any kind of social science research including positivist, post-positivist and interpretivist. Those are actually differentiated based on the underlying philosophy and overall purpose of the study and also how the researcher involved is interested to describe and analyze the phenomenon under consideration (Žukauskas et al., 2018). This study is based upon the post-positivist paradigm because, it has used theoretical background in order to justify the assumptions used in the study. Moreover, the research paradigm leads towards choosing a particular kind of research design and the researcher is bound to choose that one. While, researcher selected post-positivist

hence, he is bound to choose quantitative design because, post-positivist paradigm can't allow the researcher to redirect his direction (Kivunja&Kuyini, 2017). Hence, this study has chosen quantitative design for conducting the research and applied deductive approach as well. The researcher has then developed a questionnaire based on relevant literature available on variables used in the study. Afterwards, the researcher used SPSS in order to find the reliability of the instrument and the value of Cronbach's alpha was found to be 0.834, hence, the instrument was found to be reliable and valid. Then, the research questionnaire was circulated to the targeted population through personal and online means and data was collected by using judgmental sampling from those, who either studied the artificial intelligence or worked in the field. The researcher has then received the responses from 128 respondents collectively as, those were interested to take part in the study. Finally, the data was analyzed by using SPSS and study results were drawn for final interpretation.

RESULTS

Descriptive Analysis:

Table 1: Assessment Responses Distribution

Questions/Assessments	***Responses***	***Frequency(n)***	***Percentage (%)***
Q1: Artificial Neutral Network (ANN) can gather enormous relevant input data related to the context of the issue or problem in order to make multiple significant relationships between input and output, hence helping an individual to make informed choice?	Strongly Agree	37	28.9 %
	Agree	79	61.7 %
	I don't think so	10	7.8 %
	Disagree	2	1.6 %
Q2: Fuzzy logic can facilitate the decision making by providing qualitative inputs and making relationships between qualitative variables, those can't be quantified, hence helping an individual to make informed choice?	Strongly Agree	23	18%
	Agree	75	58.6 %
	I don't think so	26	20.3 %
	Disagree	4	3.1 %
Q3: Evolutionary computing (EC) can facilitate through generating novel and creative ideas in order to find solutions to current problems or issues under consideration hence, helping an individual to make informed choices?	Strongly Agree	35	27.3 %
	Agree	68	53.1 %
	I don't think so	21	16.4 %
	Disagree	3	2.3 %
	Strongly	1	0.8 %
	Disagree		
Q4: Artificial neural networks (ANN), fuzzy logic (FL) and Evolutionary Computing (EC) decision based application can help an individual to objectify his/her personal discretion?	Strongly Agree	23	18.0
	Agree	71	55.5
	I don't think so	27	21.1
	Disagree	5	3.9
	Strongly Disagree	2	1.6
Total		128	100.0

Question No.1:
It can be observed from above data (Table 1) that, more than 90% respondents agreed with the notion that, ANN can get enormous data related to the context of the issue or problem.

Question No.2:
It can be noted that, more than 75% nodded their heads in agreement that, FL can facilitate the decision making by providing qualitative inputs related to the problem or issue.

Question No.3:
It is mentioned in the above data (Table 1) that, more than 75% agreed with the idea that, Evolutionary computing (EC) can facilitate through generating novel and creative ideas related to problem or issue.

Question No.4:
It can be observed from above data (Table 1) that, more than 70% respondents agreed with the notion that, artificial intelligence can help an individual to objectify his/her decision making through the help of ANN, FL and EC.

Inferential Analysis:

Table 2: Relationship between Artificial Intelligence Techniques and Personal discretion

Questions	**Personal. Discretion**	
	Pearson Correlation (r)	Spearman's Correlation (ρ)
ANN	0.467 (P: 0.000)	0.475 (P: 0.000)
FL	0.585 (P: 0.000)	0.590 (P: 0.000)
EC	0.611 (P: 0.000)	0.546 (P: 0.000)
PD	0.660 (P: 0.000)	0.638 (P: 0.000)

Hypothesis 1:
H1= There is a significant relationship between Artificial neural networks(ANN) in terms of artificial intelligence and decision making in terms of personal discretion(PD)

Analysis:
It has been observed from the above data that, the p value is less than 0.05 hence, the first hypothesis is accepted. It implies that, there is a significant relationship between artificial neural networks (ANN) and personal discretion (PD). However, the correlation coefficient is around 50% hence, the strength of relationship is moderate in nature.

Hypothesis 2:
H2=There is a significant relationship between Fuzzy logic(FL) in terms of artificial intelligence and decision making in terms of personal discretion(PD)

Analysis:
It has been found after the analysis that, p value is less than 0.05 hence, the second hypothesis is also accepted. It can be concluded that, there is a significant relationship between fuzzy logic (FL) and personal discretion (PD). Moreover, the strength of relationship is considered to be moderate as, the value of correlation coefficient is around 60%.

Hypothesis 3:
H3= There is a significant relationship between Evolutionary computing (EC) in terms of artificial intelligence and decision making in terms of personal discretion (PD)

Analysis:
It has been found after analysis through SPSS that, there is a significant moderate relationship between evolutionary computing (EC) and personal discretion (PD). Moreover, the p value is found to be less than 0.05 with correlation coefficient around 60%.

Hypothesis 4:
H4=There is a significant relationship between artificial intelligence (AI) as a whole and decision making in terms of personal discretion (PD)

Analysis:
It has been found through two tests that, there is a strong significant relationship between artificial intelligence (AI) as a whole and personal discretion (PD) (Table 2). It is hence observed that, p value is less than 0.05 and correlation coefficient is above 65%. The regression analysis also shows that, the model fit is above 65% as the R value is 0.673 and the p value is less than 0.05, hence there is a strong relationship between AI and PD (Table 3).

Table 3: Regression Analysis for Personal Discretion

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.882	.776		1.137	.258
ANN	.117	.105	.095	1.115	.267
Fuzzy.Logic	.343	.105	.299	3.278	.001
Evolutionary. Computing	.435	.097	.383	4.484	.000

DISCUSSION

The final results of the study are drawn through the lens of descriptive and inferential analysis. Hence, it was found through the descriptive analysis while asking regarding whether artificial neutral network (ANN) can gather enormous relevant input data related to the context of the issue or problem in order to make multiple significant relationships between input and output. Hence, more than 90% respondents agreed that, ANN can contribute in problem solving through gathering enormous data. Moreover, while asked regarding whether artificial neutral network (ANN) facilitates the decision making process by suggesting multiple relationships between inputs and outputs of semi-structured knowledge. Hence, most of the respondents agreed that, ANN actually facilitate in suggesting the relationships between input and output. The literature on that point also mentioned that, ANN is effectively used to solve problems that has multiple alternatives and those have conflicting objectives. Hence, for that purpose, ANN uses the approach of multiple criteria decision making (MCDM) and that helps in the decision making of an individual (Malakooti& Zhou, 1994). In addition to that, while it was asked through the online and self-administrated questionnaire regarding whether fuzzy logic (FL) can be embedded with analytic hierarchy process (AHP) in order to create evaluation and selection criteria of multiple options regarding a problem or issue hence helping an individual to make informed decision, it was hinted by most of the respondents that, FL can be used with AHP in order to provide evaluation and selection criteria for the multiple solution options hence, helping an individual to make informed decision. Moreover, while asked whether FL can be used through FIS (fuzzy inference system) in order to formulate the mapping from input to output by assigning distinct values to relevant inputs and outputs, in order to make informed decision, it was suggested by most of the questionnaire respondents that, it can help to improve decision making at the end. Subsequently, when it was asked whether Fuzzy logic can facilitate the decision making by providing qualitative inputs and making relationships between qualitative variables, more than 75% respondents agreed with the idea. However, the literature also suggested that, fuzzy logic is used when the input data is not sufficient to transform it into output hence, the fuzzy logic fills that gap. It is used when the human decision maker requires human judgment regarding relating the two different sets of data that needs to be connected in one way or another (Srivastava et al., 2013). Similarly, while it was inquired from the respondents that whether evolutionary computing (EC) can reduce the problem of curse of dimensionality (COD) by using evolutionary algorithms (EA),or if it can merged evolutionary algorithm (EA) and expectation maximization (EM) algorithm in order to find an optimal solution of a novel problem or issue. Majority nodded their responses in agreement with the

notion that, COD, EA and EM all help in supporting the decision maker through AI. Moreover, while it was inquired whether evolutionary computing (EC) can facilitate through generating novel and creative ideas in order to find solutions to current problems or issues, more than 75% nodded their heads in agreement. In the similar vein, the literature suggested that, EC normally performs fitness function through which, closely matched option is chosen from the range of alternatives (Mohammadi et al., 2019). It was also mentioned that, personal decisions are either made in stationary situation or non-stationary situation. Evolutionary algorithm (EA) is suited for the decision problems in non-stationary situations as the dynamics are not fixed in such situations (Barreto et al., 2010). Subsequently, when it was asked from the respondents regarding whether AI can help in making decisions related to personal discretion, majority of them agreed on the idea that, artificial neural networks (ANN), fuzzy logic (FL) and evolutionary computing (EC) based application can retrieve all the documented previous decisions made in similar kind of situations, hence helping an individual to make informed judgment. In addition to that, when asked whether artificial neural networks (ANN), fuzzy logic (FL) and evolutionary Computing (EC) based application can link the collected relevant information with the documented previous decisions being made in the similar sort of situations, majority of them agreed with the statement. Finally, when it was inquired that, whether artificial neural networks (ANN), fuzzy logic (FL) and evolutionary Computing (EC) based application can help individual to objectify his/her decision related to personal discretion, majority of them (more than 70%) agreed with the idea that, all three contribute in the personal discretion and helping an individual to make informed judgment through the AI technology (Table 1). In addition to that, inferential analysis was carried out and it was found that, there is a significant relationship between each independent variable (ANN, fuzzy logic, EC) and decision making in terms of personal discretion (PD). It was also observed through Spearman correlation, Pearson correlation and Regression analysis that, there is a highly significant correlation between AI and personal discretion and the strength of that relationship is considered strong in nature.

CONCLUSION

The research was carry out in order to understand and explain the relationship of artificial intelligence (AI) with the personal discretion (PD). The study analyzed three variables including ANN, FL and EC in terms of AI in order to find their relationship with the decision making in terms of personal discretion (PD). The study included the literature review related with three variables and two famous studies (Pomerol, 1997, Simon, 1997) conducted on AI with respect to human decision making. The study was quantitative in nature and it used deductive approach in order to conclude the research. The close-ended questionnaire was developed and distributed to selected individuals by using judgmental sampling through online and self-administrated methods.

Subsequently, it was found through analyzing the data by using SPSS that, the association found significant between artificial neural network and personal discretion (PD), Fuzzy logic, evolutionary computing, and artificial intelligence as a whole all have a substantial impact on personal discretion. Furthermore, all relationships were found to be of a moderate type, with the exception of the link between AI as a whole and individual personal discretion, which was found to be of a strong nature. Although, similar sort of strength of relationship was also found through model fit in regression analysis. This research is crucial because it will eventually replace or supplement human judgment, which is an inexplicable mental function in humans and AI alike.

RESEARCH IMPLICATIONS

1. The personal discretion has remained an area of human judgment so, the involvement of AI in that area would be a great milestone for the human history
2. The AI has contributed immensely in almost all areas of human life that can be objectively perceived, but its involvement in the subjective matters of human life has remained rare
3. The AI can possibly replace human judgment in future if it makes less errors and provide maximum efficiency
4. The use of AI in the human decision making and especially personal discretion (PD) can raise the ethical questions related with gut feeling and etc.
5. The human decision making if completely replaced by AI raises the legal concerns related to personal discretion and human judgment.

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