

# Humanized AI for analytics that matter





Imagination, ideation and the ability to create world-changing innovations are a result of human cognitive abilities. Human beings have the innate gift of sensing environment, interpreting what they see, hear and feel, responding to stimuli, empathizing with the environment and with other fellow human beings. Empathy allows us to take complex life-altering decisions and, in doing so, causing as little harm to other people as possible. It allows us to say the right words to cheer someone up. It helps us prioritize the needs of a helpless child. It teaches us to detect pain in other human beings and provide help promptly. Most importantly, it teaches us the cost and value of life.

The capacity of humans is, however, limited when high numbers of computations and repetitive tasks are involved. Humans inherently develop bias towards certain people or environments, which impairs their judgment. Artificial intelligence has risen to the fore today, to extend the skills of humans by learning to perform and automate tasks in manners designed by humans. In healthcare, a manual diagnostic error or inconsistency can spell doom for a person. However, with AI improving accuracy to near 99.999%, the diagnostics will be far more robust. Hence, human medical experts, who front-end the service delivery machinery, will have more confidence in sharing the results and ensuing treatment plans. Similarly, AI-based assessment will likely be far more fair and free from human bias, likes and dislikes for e.g. teachers for different students). Therefore, the assessments will be far more acceptable. At the same time, when students need a teacher's emotional support, in such scenarios, AI equations should be smart enough to step back and let human empathy take precedence.

## What does AI lack? The human touch.

While AI has come a long way in providing massive computational powers, it has not yet quite grasped the concept of emotions. AI still performs tasks in a robotic fashion – delivering fixed responses irrespective of context, or providing insights for business decisions without truly understanding the end-user's emotions and needs. This prompted the need to design (a few years ago and more so today) an AI that adds the human touch to tasks and can recognize times in needs to take a step back. The widely popular Alexa, too, wants to understand human emotions and feelings and captures this information every day. By letting it know that you are happy or sad on a particular day, you help it build your emotional profile so that it can detect your mood in the future without the need to ask about your mood. This prompts longer conversations with AI, enabling better responses to your behavior – ranging from simple conversations to contacting your family in case of interventions.

AI, with its understanding of human emotions, can not only recommend movies and shows for you to watch, based on your browsing history, but also can also detect the presence of early stages of depression and recommend self-help tips for overall your well-being based on your viewership. A start-up specializing in natural language processing, assesses the mood of the user through questions. Having been trained in Cognitive Behavioral Therapy, a chatbot prepares an emotional profile of the user and based on the assessment, provides tips to manage anxiety. This is an example of Behavioral Analytics that matters. These kinds of insights are possible only when an AI has been taught to recognize the signs of a psychological problem by allowing it to study human behavior in real time and by teaching it to associate the usage of certain words by the end user to particular types behaviors through Text Analytics and Natural Language Understanding.

## So what exactly is humanized AI?

Anything that affects humans, as opposed to other machines, requires a humanized approach. AI is no different. Humanized AI is that which understands human emotions, like happiness, stress, urgency, anger and pain, when humans display them through speech, facial and physical expressions, shows considerable empathy by responding to the end-user in a human-like or natural manner. This is different from traditional Behavior and Emotion Analytics. Humanized AI not only derives insight from user data but also responds to the user in a manner and language, best suited to his/her emotional profile. True humanized AI, for instance, is able to understand the criticality of the tasks scheduled in your calendar and prioritize them based on importance and urgency. It responds to you in natural language very much like a human friend.

The three sectors in which analytics and humanized AI is currently seen as being highly relevant and is prevalent in, are education, healthcare, banking and financial services because each one of these affects certain aspects of human life directly and very closely. For any individual, these sectors and the corresponding services, influence their social, physical and economic well-being. Different touchpoints of these services to different customer and user personas show how AI affects the individual.



### Healthcare

Researchers at MIT say that they have developed an algorithm that can predict depression in a person, based on subtle cues in the person's voice. Using neural network, the algorithm can identify and categorize the level of the depression through a study of characteristics of speech such as pitch, type of breath, word choice, etc., that are symptomatic of depression. Taking into account that depression is one of the most widely suffered and undiagnosed

conditions in the world, this is an AI solution that must be considered for further development. Other emotions that a technology company is able to detect are laughter, anger and arousal, through tone of voice. It serves Fortune 1000 companies. This is particularly helpful in interventions enabled through AI in cases of situations of child abuse or domestic violence. Voice Analytics is also used in the armed military forces to detect Post Traumatic Stress Disorder (PTSD) amongst its personnel.



### Banking

AI algorithms can detect urgency and stress by the tone of your voice and through the choice of words you use. By assessing the level of stress, they can allow you to bypass the automatic IVR or chatbots and connect you to a human counterpart. The AI algorithm has developed the understanding that, in a stressful situation, the end-user might want to speak to a human rather than hassle with the algorithm. The algorithm also helps customer service personnel to quickly assess the customer profile and provide solutions most suited to that particular customer. This is especially apparent in the case of wealth management where a human expert, rather than an AI counterpart, is received well by the customer. The benefits of emotion detection in customer problem resolution is another area where AI's ability to understand when to step back and let the human take over, matters. Many financial multi-national companies are experimenting with AI in finance to give more benefits to customers.



## Education

Personalized learning through analytics and Artificial Intelligence (AI) has been enabled in several classrooms by the pioneers AI. When students use their touchpads or mobiles to go through study material, by performing simple analytics, it is possible to understand the subjects that the child is most comfortable in, and those in which he/she is stressed. AI can be used to engage with the child in solving difficulties with a question or study material. In addition, AI can be taught to comprehend when it is time to let the teacher know that the student

might need a little more attention and compassion than the rest of the class, based on the time spent on a question or stress expressed through facial expressions. Text Analytics also assists teachers in grading and evaluation, leaving them with enough time to provide personal care to children who will value the human interaction more. Carnegie Learning's Mika is one such AI solution that provides real-time insights to teachers about the student's ability to comprehend and apply concepts learnt in class.

### What is humanized AI?



'Senses' the human emotions expressed through speech, facial and physical expressions



'Thinks' and understands basic emotions to build user's emotional profile and determine whether user is open to intervention from AI



'Responds' with a context-sensitive solution giving precedence to human intelligence and reasoning



'Learns' from user's reaction to the response provided and optimizes the response for future situations

### How can we humanize AI to deliver analytics that matter?

Artificial Intelligence needs a lot of intimate information about an individual that includes, but is not limited to, gestures, facial expressions and browsing data, to be able to truly understand the person's physical or mental limitations and design optimal responses accordingly. This information includes every touch point the individual has with the world through personal devices and physical

responses. Half the people in the world consider AI intrusive when collecting such information. It makes them feel vulnerable at being under constant scrutiny. Algorithms, too, develop inherent one-sided decision-making when overly trained with particular data sets. However, AI improves its ability to empathize or humanize only with the availability of data. This puts a unique responsibility on research and business organizations to be accountable for the data collected and the algorithms built, to provide life-improving analytics.

Organizations must employ a ‘human-first’ methodology in building and running artificial Intelligence solutions. This methodology ensures that the human employing AI services has the ultimate control over the algorithm.

The algorithm, without the exclusive permission of the end-user, cannot trigger automated actions after decision-making. This ensures that the human end-user can exercise caution when the machine’s empathetic intelligence ceases and the human can supersede the Artificial Intelligence with his reliable human intelligence. Such a model where the human is always ahead of the machine

and where the machine simply extends his capabilities and does not replace it, will see better success. This also ensures that a trustworthy AI solution is built which receives buy-in from people and reduces the fear around data gathering.

Organizations and people around the world are dealing with difficult conversations that surround data privacy and security today, but to build trustworthy and dependable Artificial Intelligence, these conversations are surely worthwhile.



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