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AI & NN Based Robot Who Can Read - Human Mind

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Abstract: As technology has advanced, many have wondered whether (or simply when) artificial intelligent devices will replace the humans who perform complex, interactive, interpersonal tasks such as dispute resolution . This paper overviews the applications of artificial intelligence and neural networks of the field, where the AI & NN are combine used together and discusses the critical role of AI & NN played for Policeman, because day by day Criminal ratio is increases. Policeman for prove Criminals & Terrorist's crime using Narco test, Brain mapping, DNA test, Lie detective test & etc, but they devices are not give to desirable result. Sometimes Criminal change to evidence & release to crime . In coming year help of Artificial Intelligence & Neural Network can stop to crime & criminal ratio. This mind blowing concept is based on AI & NN. A Robot ,based on AI & NN concept , who can read human mind. And give a fruitful result for Policeman. In this paper explain working principle of mind readable Robot's . A mind reading robot is a highly advanced robotic technology that is capable of reading mind by way of electric signals. The crux of the mind reading robotic technology is to allow a human to use his/her thoughts and communicate his intention to move to the computer. Human mind-reading may be divided into five main categories, namely, emotions, desires, attentions, intentions and beliefs. A robot that feels, sees and, in particular, thinks and learns like us. In his work he wants to implement the cognitive process of the human brain in robots , neuroscientists are seeking to realize mind-reading Robots that translate neural activity into mental contents.

Keywords - Brain–computer, Electroencephalography, Aquaint , Mimicking, Kismet.

I. INTRODUCTION

Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. It is a large & growing field .One thing it could be is "Making computational models of human behavior". Since we believe that humans are intelligent, therefore models of intelligent behavior must be A I. AI will have human-level intelligence some time in the 21st century. Artificial Intelligence is a branch of computer science that develops heuristic methods for solving super-complex problems, A large class of such problems is modeling human-like behavior such as ability to think, learn by example, doubt, act, see, and speak.

AI would be a recreation of the human thought process a man-made machine with our intellectual abilities. This would include the ability to learn just about anything, the ability to reason, the ability to use language and the ability to formulate original ideas. Robotic 's are nowhere near achieving this level of artificial intelligence, robots also have the ability to learn in a limited capacity. Learning robots recognize if a certain action (moving its legs in a certain way, for instance) achieved a desired result (navigating an obstacle). The robot stores this information and attempts the successful action the next time it encounters the same situation. Again, modern computers can only do this in very limited situations. They can't absorb any sort of information like a human can. Some robots can learn by mimicking human actions. In Japan, roboticists have taught a robot to dance by demonstrating the moves themselves. Some robots can interact socially. Kismet, a robot at M.I.T's Artificial Intelligence Lab, recognizes human body language and voice inflection and responds appropriately. Kismet's creators are interested in how humans and babies interact, based only on tone of speech and visual cue. We do know that the brain contains billions and billions of neurons, and that we think and learn by establishing electrical connections between different neurons. But we don't know exactly how all of these connections add up to higher reasoning, or even low-level operations. The complex circuitry seems incomprehensible. [3]

Artificial Intelligence (AI) is a general term that implies the use of a computer to model and/or replicate intelligent behavior. Research in AI focuses on the development and analysis of algorithms that learn and/or perform intelligent behavior with minimal human intervention. These techniques have been and continue to be applied to a broad range of problems that arise in robotics, e-commerce, medical diagnosis, gaming, mathematics, and military planning and logistics, to name a few.

Several research groups fall under the general umbrella of AI in the department, but are disciplines in their own right, including: robotics, natural language processing (NLP), computer vision, computational biology, and e-commerce. Specifically, research is being conducted in estimation theory, mobility mechanisms, multi-agent negotiation, natural language interfaces, machine learning, active computer vision, probabilistic language models for use in spoken language interfaces, and the modeling and integration of visual, haptics, auditory and motor information.[4]

II. WORKING CONCEPT OF HUMAN MIND

The brain is the most complex organ in the human body. It produces our every thought, action, memory, feeling and experience of the world. This jelly-like mass of tissue, weighing in at around 1. 4 kilograms, contains a staggering one hundred billion nerve cells, or neurons.

The complexity of the connectivity between these cells is mind-boggling. Each neuron can make contact with

thousands o r e ven tens o f t housands of others, vi a t iny structures ca lled synapses. The pa ttern and strength o f t he connections i s c onstantly changing and no t wo brains a re alike. I t i s i n t hese ch anging connections that memories are stored, habits learned and personalities shaped, by reinforcing certain pa tterns o f b rain a ctivity, a nd losing others.

The h uman b rain i s pe rhaps t he m ost c omplex of organs, boa sting between 50 -100 billion nerve ce lls o r neurons t hat co nstantly i nteract w ith each other. These neurons 'carry' m essages through e lectrochemical processes; meaning, chemicals in our body (charged sodium, potassium and chloride ions) move in and out of these cells and establish an electrical current. Scientists have, for a long time now, s timulated with different t ypes of i nputs individual neurons t hat have been i solated for s tudy. To have enough s tatistical po wer, t hese e xperiments typically involved stimulating a single neuron over and over again, to get a ge neral i dea o f h ow i t r esponds t o di fferent s ignals. Although t hese s tudies have yielded a lo t o f in formation, they have their own limitations.[5]

It's i mportant t o unde rstand the c omplexity of t he human brain. It i s h ard t o get a h andle on a num ber t hat large (or connections that small). Let's try to get an understanding o f t his c omplexity by comparing i t w ith something humans have created-the entire phone system for the planet. If we took all the phones in the world and all the wires (there are over four billion people on the planet), the number of connections and the trillions of messages per day would NOT e qual the c omplexity or ac tivity of a s ingle human brain. Now let's take a " small problem"-break every phone in Michigan and cut every wire in the state. How long would it take for the entire state (about 15 million people) to get phone service back? A week, a month, or several years.

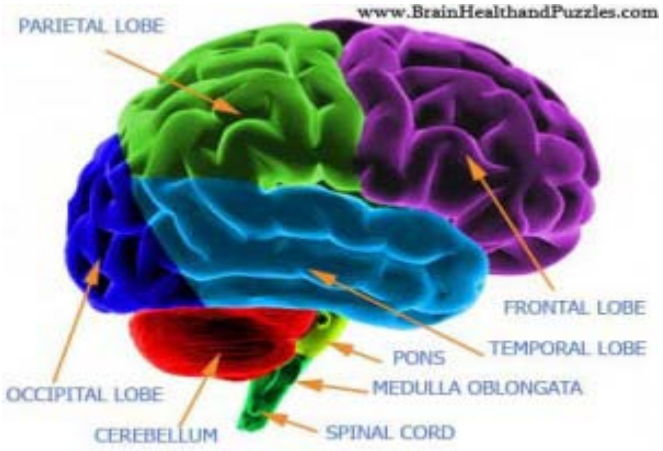

Figure 1. Human brain

III. GETTING INFORMATION IN AND OUT OF THE BRAIN

How doe s i nformation c ome i nto t he br ain. A l ot of information comes in through the spinal cord at the base of the brain. Think of a spinal cord as a thick phone cable with thousands o f ph one l ines. If c ut t hat s pinal c ord, w on't b e able t o m ove or fe el a nything i n b ody. In formation go es OUT from the brain to make body parts (arms and legs) do their job. There is also a great deal of INCOMING information (hot, c old, pa in, j oint s ensation, e tc.). V ision and hearing do not go through the spinal cord but go directly into the brain. That's why people can be completely paralyzed (unable to move their arms and legs) but still see and hear with no problems.

Information enters from the spinal cord and comes up the middle of the brain. It branches out like a tree and goes to the surface of the brain. The surface of the brain is gray due to the color of the cell bodies (that's why it's called the gray m atter). The wires or axons have a coating on them that's c olored white (called white matter).[6] brain, s pinal cord and pe ripheral nerves m ake up a co mplex, integrated information-processing and control s ystem kn own a s central nervous system. They regulate all the conscious and unconscious facets of l ife. The scientific study of t he brain and nervous system Is called neuroscience or neurobiology**.**

The hu man brain is t he c enter of t he c entral nervous system in humans as well as the primary control center for the peripheral nervous system. The brain controls "lower" or involuntary ac tivities s uch as heartbeat, respiration, and digestion - these are known as autonomic functions.

The b rain also c ontrols higher o rder, c onscious activities, s uch as t hought, reasoning, a nd a bstraction.[7] Mind is a w eb of r elationships, o f pa tterns. Many philosophers have t aken t his pe rspective, using different languages to describe roughly similar ideas. mind as a field of d ynamic qua nta, e ach o ne e xtending itself over o ther quanta to w hich it is related. Goertzel (19 94), in a similar spirit, portrays mind as a web of patterns – a dynamic web, continually r ebuilding its elf by a d ynamic i n which e ach component, e ach p attern, c ontinually mo difies th e o ther patterns that it's related to.

IV. BASIC HUMAN MIND -READING TECHNOLOGY

Brain-computer i nterface us es electroencephalography—a m easure of t he brain's el ectrical activity—to help distinguish which brain signal corresponds with the body's performance of a particular intended action. In these expe riments, s pecifically t argeted brain i mpulses generated when a person thought about going from a sitting position to standing and vice versa. Computers process th is data—which c an b e re inforced by c ombining it w ith measures of electrical activity in muscle—in order to detect these brain signals and interpret their intent. The idea is to allow a person to use thought alone to communicate with a computer a bout t he i ntent t o m ove. We a re expe rimenting with processing the signal and selecting useful features from it, a nd designing a c lassifier c apable o f di stinguishing between t he these t wo t ransitions—sitting t o standing a nd standing to sitting."[9]

Decoding neural a ctivities us ing machine l earning methods i s a n em erging area s ince a f ew years a go. T he neural d ata i s us ually obtained by pr esenting the w ord and/or i mage of a c oncept to an experiment participant and recording his brain images (e.g., fMRI, EEG). The types of concepts tested so far are very simple (e.g., concrete nouns, and more recently adjective-noun compositions), but I believe experiments on more complex and abstract concepts are t o b e e xpected in t he near f uture (or are al ready o n progress!). G iven the neural imaging data, one natural task is to find out the mapping between concepts and images. An intermediate l ayer of s emantic f eatures c an b e a dded between co ncepts and images, w hich is i ntuitive and also makes things more tractable. So now the problems are what

the right semantic features are, and how to find out the mappings between these layers.

Figure2. Mind reading technology

Figure 3. Mind reading concept apply on system

V. APPLY CONCEPT OF MIND READING TECHNOLOGY ON ROBOTIC DEVICE

Robotic technology has always been on the forefront when it comes to making our lives easier and safer. Robots have assumed great importance in our lives and robotic technology is presently used for performing tasks varying from simple household work to complicated and dangerous bomb squad assignments. The most challenging proposition that scientists are faced with is decoding the human brain. Various research projects and experiments have been successful to the extent of interpreting the brain's signals through brain–computer interfaces.

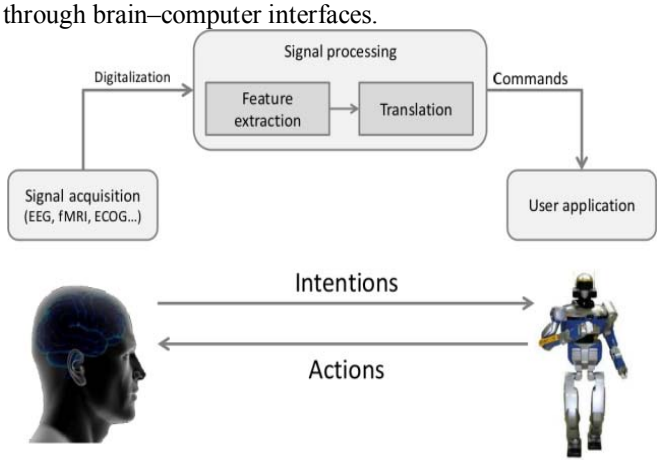

Figure 4. Mind reading concept apply on robot technology

The brain–computer interface is the main operating unit of mind-reading robots. This interface is based on electroencephalography (EEG). Electroencephalography is a method used to measure the electrical activity of the brain. A mind-reading robot uses the EEG signals to distinguish between various brain signals pertaining to different body movements with an intended action. Each body movement is brought about by an electrical impulse from the brain. Therefore, in order to read the human mind, it is essential to track the electrical activity happening in the human brain. This data can be reinforced by combining it with the measure of electrical activity in the muscle; as a result, the brain signals are not only detected but their intent is also interpreted. Analysis of these categories is instrumental in devising algorithms for mind reading robotic technology. The method of deciphering the electric signals of the human brain and converting them into spatial representations is called brain mapping. The neurons of the brain are responsible for generating the electric signals; these signals are monitored by placing a number of electrodes on the scalp.[10][11][12]

Figure 5. Human Mind readable Robot

VI. PRINCIPLE OF MIND READING ROBOT FOR POLICEMAN

George Orwell's developing a tool that Thought Police might have found useful: an artificial intelligence system designed to gain insight into what people are thinking. With the entire Internet and thousands of databases for a brain, the device will be able to respond almost instantaneously to complex questions posed by intelligence analysts. As more and more data is collected—through phone calls, credit card receipts, social networks like geolocation, Internet searches, records—it may one day be possible to know not just where people are and what they are doing, but what and how they think. The system is so potentially intrusive that at least one researcher has quit, citing concerns over the dangers in placing such a powerful weapon in the hands of a top-secret agency with little accountability. people are and we getting Aquaint Known as A quaint, which stands for " Advanced Question Answering for Intelligence," Aquaint, attempts to find ways to get into someone's mind and understand what he or she is thinking.

One area of study is to attempt to determine if people are lying simply by watching their behavior and listening to them speak. According to one CASL document, " Many deception cues are difficult to identify, particularly when they are subtle, such as changes in verb tense or extremely

brief facial e xpressions. C ASL re searchers a re s tudying these cue s i n de tail w ith advanced measurement and statistical analysis te chniques i n order to recommend ways to identify deceptive cue combinations."

Figure 6. A Robot for helping Policeman

VII. CONCLUSION

The pu rpose of t his pa per w as t o c onstruct a methodology for helping po liceman o f better pr oving criminal's crime & punish him. Mind reading Robot purpose is, sting operations and severe investigations (as in the form of lie detector).This technology can prevent from terrorism.

VIII. ACKNOWLEDGEMENT

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