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RANE POYTECHNIC TECHNICAL CAMPUS

ARTIFICIAL INTELLIGENCE

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ABSTRACT

It is a science and engineering of making intelligence machine, 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. While no consensual definition of artificial intelligence (AI) exists. AI is broadly characterized as the study of computation that allow for perception, reason and action.

INTRODUCTION

Artificial intelligence is a branch of science which deals with helping machines find solutions to complex problems in a more human like fashion. This generally involves borrowing characteristics from human intelligence and applying them as algorithms in a computer friendly way. Artificial intelligence refers to the intelligence of machines. This is in contrast to the natural intelligence of humans and animals with artificial intelligence, machines perform functions such as learning, planning, reasoning and problem solving. Most noteworthy, artificial intelligence is the simulation of human intelligence by machines. It is probably the fastest growing development in the world of technology and innovation.

HISTROY OF AI

1941-konrad zuse built the first working program-controlled computers.

1956- The first demonstration of the logic theorist(lt) written by allen newell, j.c. shaw and Herbert A. simon. This is often called the first AI program.

1960- Ray solo mono off lays the foundations of a mathematical theory of AI, introducing universal Bayesian methods for inductive inference and prediction.

1980- First national conference of the American association for artificial intelligence (AAAI) held at Stanford.

2000- Interactive robopets (“smart toys”) become commercially available, realizing the vision of the 18th century novelty toy makers.

The nomad robot explores remote regions of Antarctica looking for meteorite samples.

WHY AI?

Artificial intelligence enhances the speed, precision and effectiveness of human efforts. In financial institutions, AI techniques can be used to identify which transactions are likely to be fraudulent, adopt fast and accurate credit scoring, as well as automate manually intense data management tasks.

TYPES OF AI

There are three types of artificial intelligence. They are machine learning, deep learning and artificial intelligence. In short, machine learning is AI that can automatically adapt with minimal human interference. Deep

learning is subset of machine learning that uses artificial neural networks to mimic the learning process of the human brain.

DEEP LEARNING

Where machine learning algorithms generally need human correction when they get something wrong, deep learning algorithms can improve their outcomes through repetition, without human intervention. Deep learning is a machine learning technique that layers algorithms and computing units-or neurons-into what is called an artificial neural network. These deep neural networks take inspiration from the structure of the human brain. Data process through this web of interconnected algorithms in a non-linear fashion, much like how our brains process information.

MACHINE LEARNING

Machine learning refers to the study of computer systems that learn and adapt automatically from experience , without being explicitly programmed. With simple AI, a programmer can tell a machine how to respond to various sets of instructions by hand-coding each “decision”. With machine learning models, computer scientists can “train” a machine by feeding it large amounts of data. The machine follows a set of rules-called an algorithms- to analyze and draw inferences from the data. The more data the machine parses, the better it can become at performing a task or making a decision.

ARTIFICIAL IINTELLIGENCECE

At its most basic level, the field of artificial intelligence uses computer science and data to enable problem solving in machines. While we don’t yet have human-like robots trying to take over the world, we do have examples of AI all around us. These could be as simple as a computer program that can

play chess, or as complex as an algorithm that can predict the RNA structure of a virus to help develop vaccines.

CURRENT STATUS OF AI

Artificial intelligence has become a technological reality for business and organizations across industries. Even if its benefits may not be always easy to quantity, AI has proven itself capable of improving process efficiency, reducing human errors and labor, and extracting insights from big data. In 2019, AI adoption among large companies has increased by 47% compared to 2018, according to the latest artificial intelligence index report. AI has made its way into many enterprise applications, including customer relationship management software, recruiting services, workforce productivity, and resource planning tools.

According to the same report, global private AI investment exceeded $70 billion last year, highlighting the interest in AI and related subjects have attracted more university students around the world and made AI experts some of the most sought-after professionals in developed countries.

FUTURE OF AI

Scaling artificial intelligence can create a massive competitive advantage, but it's not enough to invest in cutting-edges technologies and algorithms. You need to rewire decision making and operations to extracts value- and invest in human capabilities to make it stick. The pioneers of AI @ scale-the companies that have scaled AI across the business and achieved meaningful value from their investments-typically dedicate 10% of their AI investments to algorithms, 20% to technologies , and 70% to embedding AI into business processes and agile ways of working. In other words, these

organizations invest twice as much in people and processes as they do in technologies.

In order to achieve significant financial benefits from their machines, companies will have to look beyond automation-and focus instead on learning and organizational transformation. A symbiotic relationship is necessary, where companies don't just each machines what humans already know; they deploy whatever human-machine interaction the situation calls for, adapting as needed to changing context, circumstances, and scenarios.

APPLICATION OF AI

AI application in E-commerce , application of artificial intelligence in education, artificial intelligence in lifestyle, artificial intelligence in navigation, application of robotics, application of healthcare, artificial intelligence in agriculture, application in gaming, internet of things, visualization, visual personal assistant, social network analysis, sample text, natural language processing and graph ,image analytics ,etc.…

ADVANTAGE OF AI

Reduction in human error, zero risk, unbiased decisions, digital assistance, AI in risky situations, it defines a more powerful and more useful computers, it introduces new and improved interface for human interaction, it handles the information better than humans, it is very helpful for the conversion of information into knowledge, it improves efficiency so reduce the duration of time to accomplish a task in comparison to humans.

CONCLUSION

Artificial intelligence (AI) has been slowly but surely entered every area of our lives, from online shopping to TV viewing to everything. AI or artificial intelligence in other words, is the study of man-made computational devices and systems. Today AI has a hot topic everywhere and is making its way into education . however , some say it will take over education to the impairment of students, whereas others indicate that AI will revolutionize and improve educations. There are many advantages that artificial intelligence provide like tutoring, grading, any personalization in education, feedback on course quality, immediate feedback to students

ROTARY TO RECIPROCATING MOTION MECHANISM

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ABSTRACT

Reciprocating motion also called reciprocation is a repetitive up and down or back and forth linear motion. It we carry out a parallel linear motion with respect to a rotational motion. Here you can control the linear motion by controlling the rotation of the cam.

CONSTRUCTION

DRIVING PAD:

Here the driving pad is attached to the driving shaft and the environment. The hinge pin is attached to one side of the pad.

RECIPROCATING MECHANISM:

This way it moves sideways. An object with a rectangular shape has a vertical long hole of equal size to the hinge pin shape.

CONNECTING ROD:

This connecting rod integrates with its reciprocating mechanisms to create an integrated design.

CYLINDER:

Hold on the cylinder, slider and it will have a hopper on it. it is attached to the floor by a leg.

SLIDER:

It attaches to the rod and is used to expel the incoming material through the hopper.

WORKING PRINCIPLE:

- The hinge pin mounted on the drive shaft causes the centrifugal force when the driving shaft rotates.
- It is a reciprocating mechanism with the help of a rod that guides the slider in a straight line.
- Job comes into the cylinder when descending through the hopper.
- When it falls at a constant speed the slider will push at a constant speed.

ADVANTAGES:

- Will reduce the use of Rack and Pinion
- Will work for a long day and long time
- The speed of the shaft can be easily controlled with gears
- Rack and pinion does not cause rust and wear
- Low power cost

APPLICATIONS:

Examples of rotary to reciprocating in Industrial,

- Hammer drill
- Reciprocating saw
- Saber saw
- Powered files
- Linear actuators
- Positioning table
- broaching
- stamping presses with fly wheel energy storage

CONCLUSIONS

Reciprocating systems are similar in some aspects in comparison to rotational system, with regards to cleaning ability, reduction of enterococcus facials and dentine defects. On the other hand being single use and enhanced resistance to fatigue, together with novel. Methods to treat the alloy may lead to the thought that reciprocal systems are an excellent aid to root canal preparation.

ROTARY TO RECIPROCATING MOTION MECHANISM

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INTRODUCTION

Most of the cities, towns and villages in India are not well designed to facilitate the suitable garbage collection methods. Common Public dustbins are filling over with the garbage and no one is concerned to clear them up as and when they get completely packed with overflowing garbage. Keeping in view of this big problem, it will be a good suggestion to do something to deal with this unmanaged waste and from this; the concept of 'Smart Dustbin' came out.

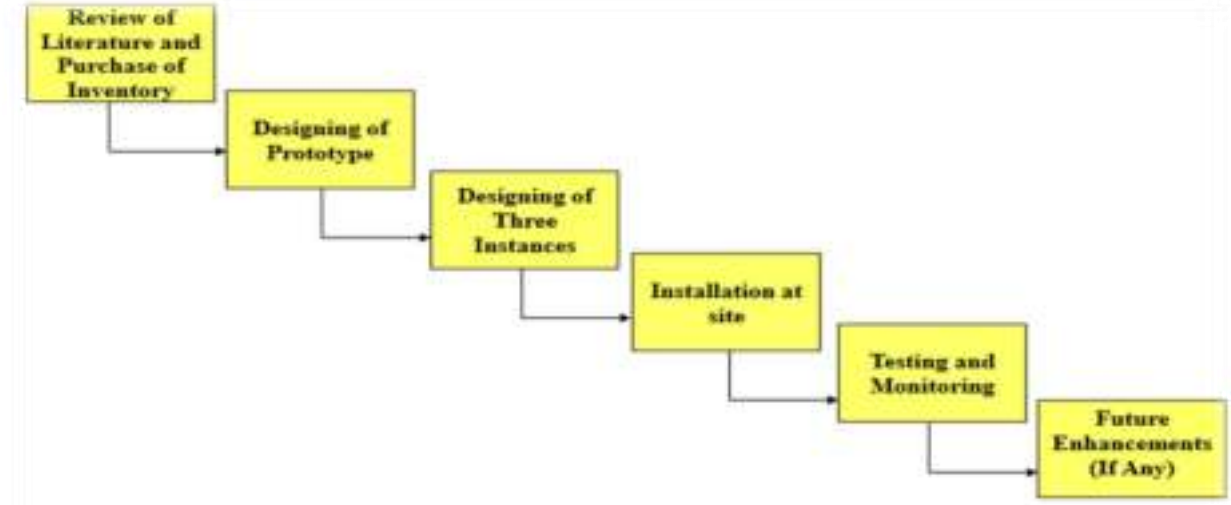
OBJECTIVE:

To design a "Smart Dustbin" which is a GSM enabled bin which automatically detects the garbage level and sends message to respective municipal authorities updating the status of the bin.

IDEA

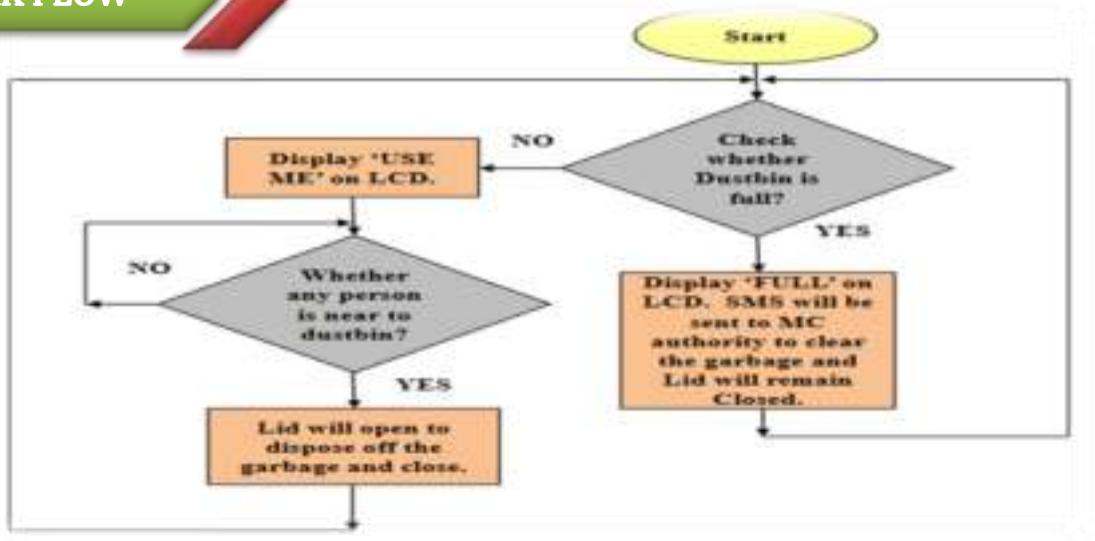
- When any object close to the sensing area, the lid will open automatically.
- When a dustbin gets full, a message will be sent to the municipal corporation.

WORK PLAN



Major Tasks involved in Proposed Project

WORK FLOW



BENEFITS OF THE VILLAGE

•The overflowing and cleaning of smart bins will be continuously monitored and effectively managed.
•Economically Effective technique if once implemented successfully.
•It also intends at building a clean as well as green surroundings.

BENEFITS OF THE INSTITUTE

• This technique can also be implemented in our institute to keep its campus clean and healthy.
• Customization of such kind of techniques in our campus can motivate our students to think about the latest innovation.
• Students can start their own start-ups in which they can make such kind of commercial products.

FUTURE ENHANCEMENTS

• Cloud Platform and Raspberry Pi can be used for Data Storage and Data Analysis.
• Daily Produce of waste can be monitored.

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Scientist study the world as it is,

Engineers create the world that never has been.

- Theodore Van Karmant

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