

ARTIFICIAL INTELLIGENCE IN BANKING INDUSTRY

PROBLEM STATEMENT:

Top Common problem in AI

1.Computing Power

The amount of power these power-hungry algorithms use is a factor keeping most developers away. Machine Learning and Deep Learning are the stepping stones of this Artificial Intelligence, and they demand an ever-increasing number of cores and GPUs to work efficiently. There are various domains where we have ideas and knowledge to implement deep learning frameworks such as asteroid tracking, healthcare deployment, tracing of cosmic bodies, and much more.

They require a supercomputer's computing power, and yes, supercomputers aren't cheap. Although, due to the availability of Cloud Computing and parallel processing systems developers work on AI systems more effectively, they come at a price. Not everyone can afford that with an increase in the inflow of unprecedented amounts of data and rapidly increasing complex algorithms.

2.Trust Deficit

One of the most important factors that are a cause of worry for the AI is the unknown nature of how deep learning models predict the output. How a specific set of inputs can devise a solution for different kinds of problems is difficult to understand for a layman.

Many people in the world don't even know the use or existence of Artificial Intelligence, and how it is integrated into everyday items they interact with such as smartphones, Smart TVs, Banking, and even cars (at some level of automation).

3.Limited Knowledge

Although there are many places in the market where we can use Artificial Intelligence as a better alternative to the traditional systems. The real problem is the knowledge of Artificial Intelligence. Apart from technology enthusiasts, college students, and researchers, there are only a limited number of people who are aware of the potential of AI.

For example, there are many SMEs (Small and Medium Enterprises) which can have their work scheduled or learn innovative ways to increase their production, manage resources, sell and manage products online, learn and understand consumer behavior and react to the market effectively and efficiently. They are also not aware of service providers such as Google Cloud, Amazon Web Services, and others in the tech industry.

4.Human-level

This is one of the most important challenges in AI, one that has kept researchers on edge for AI services in companies and start-ups. These companies might be boasting of above 90% accuracy, but humans can do better in all of these scenarios. For example, let our model predict whether the image is of a dog or a cat. The human can predict the correct output nearly every time, mopping up a stunning accuracy of above 99%.

For a deep learning model to perform a similar performance would require unprecedented finetuning, hyperparameter optimization, large dataset, and a well-defined and accurate algorithm, along with robust computing power, uninterrupted training on train data and testing on test data. That sounds a lot of work, and it's actually a hundred times more difficult than it sounds.

One way you can avoid doing all the hard work is just by using a service provider, for they can train specific deep learning models using pre-trained models. They are trained on millions of images and are fine-tuned for maximum accuracy, but the real problem is that they continue to show errors and would really struggle to reach human-level performance.

5.Data Privacy and Security

The main factor on which all the deep and machine learning models are based on is the availability of data and resources to train them. Yes, we have data, but as this data is generated from millions of users around the globe, there are chances this data can be used for bad purposes.

For example, let us suppose a medical service provider offers services to 1 million people in a city, and due to a cyber-attack, the personal data of all the one million users fall in the hands of everyone on the dark web. This data includes data about diseases, health problems, medical history, and much more. To make matters worse, we are now dealing with planet size data. With this much information pouring in from all directions, there would surely be some cases of data leakage.

Some companies have already started working innovatively to bypass these barriers. It trains the data on smart devices, and hence it is not sent back to the servers, only the trained model is sent back to the organization.

6.The Bias Problem

The good or bad nature of an AI system really depends on the amount of data they are trained on. Hence, the ability to gain good data is the solution to good AI systems in the future. But, in reality, the everyday data the organizations collect is poor and holds no significance of its own.

They are biased, and only somehow define the nature and specifications of a limited number of people with common interests based on religion, ethnicity, gender, community, and other racial

biases. The real change can be brought only by defining some algorithms that can efficiently track these problems.

7.Data Scarcity

With major companies such as Google, Facebook, and Apple facing charges regarding unethical use of user data generated, various countries such as India are using stringent IT rules to restrict the flow. Thus, these companies now face the problem of using local data for developing applications for the world, and that would result in bias.

The data is a very important aspect of AI, and labeled data is used to train machines to learn and make predictions. Some companies are trying to innovate new methodologies and are focused on creating AI models that can give accurate results despite the scarcity of data. With biased information, the entire system could become flawed.

Conclusion

Although these challenges in AI seem very depressing and devastating for mankind, through the collective effort of people, we can bring about these changes very effectively. According to Microsoft, the next generation of engineers has to upskill themselves in these cutting edge new technologies to stand a chance to work with organizations of future and in order to prepare you, upGrad has been offering programs on these cutting edge technologies with many of our student working in Google, Microsoft, Amazon and Visa and many another fortune 500 companies.

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