Examining the Value of and Possible Improvements to Cloud AI

Introduction

Artificial intelligence has long been incorporated into everyday life. Microsoft Cortona, Amazon Alexa, and Apple Siri are three examples of how AI can positively benefit a company when used correctly. However, issues exist with AI, specifically cloud AI, bringing questions on the value of cloud AI, and possible improvements.

Problem description

Research shows that AI is beneficial only when used to find patterns in data and when the AI application works closely with the middleware and analytical services [1]. Both Google Cloud AI and Amazon AI offer three main AI models, binary prediction, category prediction, and value prediction [1]. Best suited for finance and manufacturing operations, binary prediction finds patterns in data using a series of "yes" and "no" questions [1]. Category prediction places data into previously learned categories where additional meaning needs to be found in the data but direct correlation between data and data in the database is not present; category prediction is best used by companies in the insurance industry, retail, finance, healthcare, and manufacturing [1]. Value predictions tell the likely quantitative outcome through pattern finding in the data [1]. Possible users of value predictions include the government, manufacturing operations, finance, and healthcare [1]. The problem is binary prediction, category prediction, and value prediction all produce single task AIs. As an example, the only use case of category prediction in insurance companies has been to determine possible causes of accidents [1].

Data wise, according to Neil Lawrence, an employee of Amazon's AI team, an AI requires hundreds of thousands of times more data than humans need to understand concepts [2]. The problem is how to acquire the data. In technology companies such as Google and Facebook, acquiring data is simple since

there is constant user interaction. However, acquiring data in the healthcare industry poses ethical issues such as making someone sick to acquire data [2].

Objectives

The following three goals will be examined:

1) Measure the benefits of single task cloud AIs.

2) Investigate and develop a multi-task cloud AI.

3) Determine the usefulness of cloud AI with limited amounts of data.

Currently, only single task AIs are produced using the three main AI models. Google's DeepMind AI system is said to have the ability to beat 49 different Atari games, but once a game is beat, the AI must be retrained to beat another game due to interfering rules between the games [2]. Research will be conducted through integrating test cloud AI applications into business systems and measuring the company revenue throughout the testing term. A 10 percent or greater increase in a company's profit when compared to previous records will provide strong proof that cloud AI was the cause and not by chance or regular fluctuations.

In addition, the development of multi-task cloud AIs will be explored. A multi tasking cloud AI will certainly increase the value and usefulness of cloud AI systems. Joint research will be conducted with universities and technology companies in China, United Kingdom, United States, Australia, and Canada. A team of developers will be brought to Vancouver, where the development of a multi-task cloud AI will take place.

According to previous research, enterprises have neglected the collection of data, limiting the abilities of AI [1]. Both Google and Amazon cloud AIs apply AI in their respective clouds, typically providing a source of data and patterns [1]. The situation when minimal data is presented to the AI will be examined. Using

integrated test cloud AI applications and multiple sets of minimal data, tests will be conducted, and observations will be made on how the applications act when put forward to these types of situations.

Significance

Cloud AI will be the future of businesses. Research shows that over the next three years, 85 percent of executives from IT and business expect large-scale investments in AI-related technology [3]. Businesses that want to keep or gain a technological advantage over other companies in the industry must adopt AI in a quick and cost-effective manner. Running an AI application costs an average of less than $10 per hour, while the average worker costs more than $11 an hour. If the value of cloud AI can be justified and multi-task cloud AIs can be developed, entering this $40 billion industry [4] will be worthwhile.

References

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