About AI

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1   Introduction

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

2   How does AI work?

As the hype around AI has accelerated, vendors have been scrambling to promote how their products and services use AI. Often what they refer to as AI is simply one component of AI, such as machine learning. AI requires a foundation of specialized hardware and software for writing and training machine learning algorithms. No one programming language is synonymous with AI, but a few, including Python, R and Java, are popular.

In general, AI systems work by ingesting large amounts of labeled training data, analyzing the data for correlations and patterns, and using these patterns to make predictions about future states. In this way, a chatbot that is fed examples of text chats can learn to produce lifelike exchanges with people, or an image recognition tool can learn to identify and describe objects in images by reviewing millions of examples.

AI programming focuses on three cognitive skills: learning, reasoning and self-correction.

processes: This aspect of AI programming focuses on acquiring data and creating rules for how to turn the data into actionable information. The rules, which are called algorithms, provide computing devices with step-by-step instructions for how to complete a specific task.

Reasoning processes: This aspect of AI programming focuses on choosing the right algorithm to reach a desired outcome.

Self-correction processes: This aspect of AI programming is designed to continually fine-tune algorithms and ensure they provide the most accurate results possible.

3   AI Framework

1. Tensor Flow Hailing from the Google family, Tensor Flow proves to be a robust open-source framework that supports deep learning and which can be accessed even from a mobile device.

   Tensor flow is considered an apt tool for statistic program development. As it offers distributed training, machine models can be trained a lot more effectively at any level of abstraction that the user prefers.

   Features

   (a) A scalable multi programming interface for easy programming
   (b) Strong growth drivers, with a strong open source community
   (c) Provides extensive and well-documented manuals for people

   Pros

   (a) The language used by tensor flow is Python, which is very popular nowadays.
   (b) This framework is capable of high computational power. Hence, it can be used on any CPU or GPU.
   (c) Uses computational graph abstraction to create machine models

   Cons

   To make a decision or prediction, the framework passes the input data through multiple nodes. This can be time-consuming. It also lacks many of the pre-trained models of AI.

2. Microsoft CNTK Microsoft CNTK is a faster and more versatile open-source framework that is based on neural networks that support text, message, and voice remodeling.

   It provides an efficient scaling environment due to a faster overall evaluation of the machine models while taking care of accuracy.

   Microsoft CNTK has integrations with major massive datasets, making it the leading choice to be adopted by big players like Skype, Cortana, etc., with a very expressive easy-to-use architecture as well.

   Features

1. Highly optimized to provide efficiency, scalability, speed, and high-level integrations

2. Has built-in components such as hyperparameter tuning, supervised learning models, reinforcement, CNN, RNN, etc.

3. Resources are utilized to provide the best efficiency.

4. Own networks that can be expressed efficiently such as full APIs, both high level and low level.