Resource Prediction using RNN Architecture and Decision Tree Algorithm

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Abstract

Every year, companies all around the world are spending trillions of dollars on their IT infrastructure. In many cases, these companies are overutilizing their IT infrastructure in order to achieve sustainable and continuous operations. According to the statistics.com report in the year 2021, only 41% of the companies worldwide are using the public could. Furthermore, 17% worldwide are using the private cloud. If we assume that majority of that percentage is using their infrastructure according to the calculated demand (such as on-demand service), still 43% of the companies around the globe are still using traditional IT systems. Therefore, the majority of the business is suffering from overutilizing its resources, and this is a huge cost.

In order to achieve a continuous operation, Microsoft introduced a monitoring system called Microsoft System Center Operations Manager (SCOM). This will allow monitoring the IT infrastructure with triggering reports and alerts including but not limited to Storage, CPU, Memory and etc. However, there is no component to predict or forecast the future resource.

As an IT infrastructure service provider, ThinkTech has its own challenges. Providing a smooth service to their customer while keeping the overall cost down is a major challenge. Currently, ThinkTech has their own data centers, and they charge their customers monthly basis on resources.

This research is focused on developing the software which will work with Microsoft SCOM and provide future resource utilization information. Therefore, ThinkTech will be able to bill their customers and make sure that when they order hardware, maintain a level of resource which will not over-utilized to cut down the operational cost.